VERMONT LIFE

1965 AUTUMN VOL. XX NO. 1 75¢

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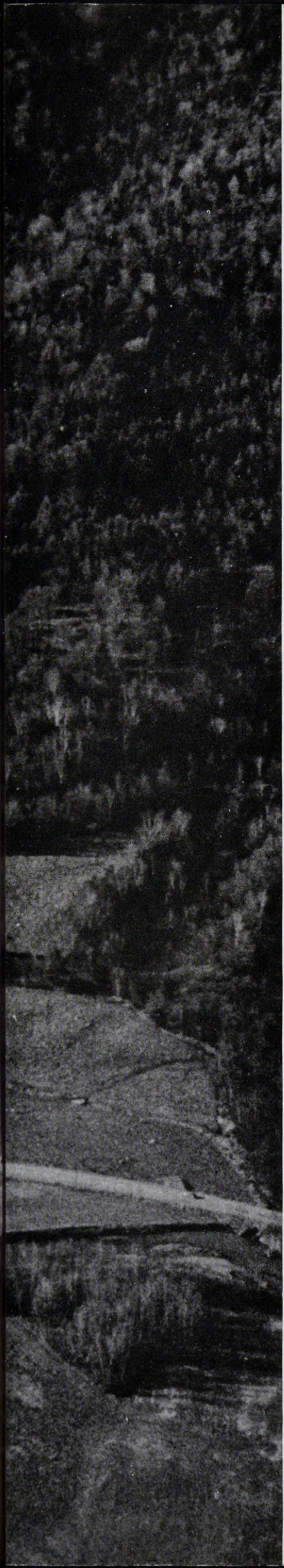

VERMONT LIFE

VOLUME XX, NUMBER 1 AUTUMN, 1965

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Published quarterly at Montpelier, Vermont by the Vermont Development Department.
COMMISSIONER: Elbert G. Moulton
MEMBERS OF THE BOARD: Alexander B. R. Drysdale, Walter Foeger, Phillip Cabot Camp, Glendon B. Orne, Richard H. Wadhams

Per Copy—75c; Per yr.—$2.50 ($4.50 for 2 yrs.; $6.50 for 3 yrs.)—Foreign Subscriptions add 40c per year.

Editorial, Business & Subscription Offices: 6 Baldwin St., Montpelier, Vt. 05602

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North Pomfret glows serenely in the afternoon sun of late September. R. D. LA SALLE

COME OUT IN THE EARLY MORNING; SNIFF THE BREEZE AND FEEL THE AIR.
STRETCH OUT IN A MEADOW WARMED BY SEPTEMBER'S SUN.
CANADA GEESE ARE WINGING SOUTH FAR ABOVE YOU.
PAUSE IN A WOODED CLEARING AND LISTEN TO THE FOREST SOUNDS—
TAKE A DEEP BREATH, A NEW LOOK, AND SAVOR

the sights, the sounds, the sense

AS SUMMER LEAVES VERMONT AND THE LAND PREPARES FOR WINTER.

by RONALD ROOD
Photographs by BULLATY-LOMEO

# of Autumn

My dog stopped in his tracks, one foot raised. He waited with ears erect, every muscle tense.

I stopped, too, and strained my eyes to see what had caught his attention.

Ahead of us, a little pile of leaves suddenly flew apart. Bounding out of them came a striped chipmunk, his cheeks stuffed with beechnuts. A month earlier we would probably have passed him unnoticed. The green plants and decaying mould of the forest floor would have muffled the sound of his activity. Now, however, the new crop of fallen leaves betrayed his slightest movement.

This is the way with an autumn walk. New sounds and new senses are at every hand and old ones are magnified. A deer mouse bounding through the leaves sounds like a deer. The crisp air brings sounds from astonishing distances—the slamming of a faraway door, or the call of unseen crows. Perhaps you may hear the post-season drumming of a ruffed grouse on a log—so distant that all you do is feel the beat of the powerful wings and cannot tell the direction of the sound.

In the meadows of autumn, you can hear a population explosion. Most of the grasshoppers, crickets and katydids have been silent until now. They couldn't have made a noise if they'd wanted to. They've merely been awkward, growing nymphs whose wings or legs or other organs of sound-production have been slow to develop. Now with the shedding of the last juvenile skin, a million adolescents emerge as full-formed adults.

Generally it's the males that sing, proclaiming from a blade of grass or sprig of goldenrod their new status. Their numbers swell with each new arrival until, in September, the countryside is a big insect hubbub.

"How can I catch 'em?" wailed one small friend who went out into the insect din in our meadow to find a katydid. "I don't know where to look. I hear them everywhere!"

During the sunny part of the day, the insect chorus races headlong. But if the weather turns cool, so does the enthusiasm of the songsters. They sing at a slower pace. And on a night that hovers near frost, only a few crickets scratch out a slow cadence with their wings. Finally, they, too, fall silent.

There's one familiar insect so delicately tuned to the weather that you can tell the temperature merely by listening to its song. This is the snowy tree cricket. It's a nocturnal, greenish-white insect about an inch long with a medium-pitched musical note. You may hear the tree-cricket from a bush or tree trunk—sometimes dozens of them in unison.

Once you've identified the tune, you're ready for the temperature. Count the number of chirps in 15 seconds. Add 40, and there's your answer in degrees. It's surprisingly accurate, too.

Dark skies and greens of conifers provide a dramatic backdrop for autumn's show.

The insect songsters are as typical of autumn as the birds are typical of summer or the chorus of frogs is of spring. But on a frosty morning, the insects are silent. Almost all frosty mornings are clear and still in Vermont, for it's the absence of cloud cover that lets the heat escape from the earth. With the rising of the sun, however, there's a new autumn sound. We often go out in our back yard just before sunrise to hear it.

The sound begins as the first rays of the sun stretch to our maples. At first, we hear only a faint whisper. Then there's another whisper—and another, until it sounds as if we're standing in the middle of a ghostly waterfall. Only this is a *leaf*-fall—the parting of leaves from the tree as the last few cells of the leafstalks give way under the combination of frost and sun. In a matter of minutes, a huge tree may shed almost all its leaves without a breath of wind. As you watch, it may cover the ground with a red-and-yellow carpet where half an hour before there was but frosted grass.

Out in the meadow, you may hear other frosty-sunny sounds. They come in an irregular snapping, like the crackling of an invisible fire. Seed pods of weeds, split by the frost, fly open at the touch of the sun's rays, throwing their burdens in all directions. The purple vetch is especially good at this. Its pods split with a corkscrew twist, making a sound like elfin fingers snapping at your feet.

Go to the edge of the woods and you'll hear more cracklings. Witch-hazel capsules, bearing their loads of little seeds, grow in such a way that tensions build up along the capsules' seams. Under the action of frost and sun, the seams finally spring open. This throws the seeds as much as twenty feet in all directions, like miniature popcorn. You can hear a witch-hazel bush "explode" many yards away. The tiny seeds falling on the leaves sound like a small sleet storm.

"There was another sound," a Bennington resident informed me, "which I haven't heard for years. Frost would open the chestnut burrs and we'd hear the nuts fall to the ground in the woods. Today, the chestnut is gone. But you can still hear the sound of falling beechnuts, hickory nuts and acorns—that is, the ones the squirrels haven't gotten."

One October day Peg and I stopped by the side of a country road. We turned off the engine, got out and leaned against the fender. As we stood there, a noise seemed to come and go on the breeze. It sounded like dozens of rusty hinges creaking and squawking high in the sky.

We looked up. Perhaps half a mile above our heads, stretched out in a thin wavering "V," was a flock of more than a hundred Canada geese. The old gander, whose wings cleft the air at its point, stretched his neck toward the south. Some scientists say that geese fly in formation so that only one wing beats the unbroken air. Others say it's an aerial version of the "single file" for which geese are noted on the ground. But no matter what the explanation, a sight such as the one we watched and listened to will be remembered a lifetime. More important, we'd have missed it completely if we'd stayed in the car. By habit, man seldom raises his eyes more than fifteen degrees above the horizon.

Field and forest near Newfane.

There's another autumn sensation, too. Put on a blindfold so you cannot see the fall colors. Stuff your ears with cotton so you aren't able to hear the autumn sounds. Chances are, you'll still be able to guess the season. Your nose will give you a clue. Poor though our sense of smell may be, it still brings us the messages of fall.

Drive slowly along a Vermont road. A faint winey smell tells you of wild grapes in a fencerow. You catch the scent of asters fading on a hillside. You get the pungent smell of ferns touched by frost. There are chokecherries, smelling something like bitter almonds; sumac with its lemony aroma. There's the rich smell of goldenrod, unjustly blamed by many hay fever sufferers for their woes, while its cousin, ragweed, goes almost unnoticed.

Then, of course, there's the aroma of burning leaves. "Doesn't really make sense to burn them," a county agent told me. "Besides the fire hazard, burning leaves release all the mineral matter back to the soil at once—too fast for the new growth to use it all. And the organic matter goes up in smoke. But I suppose people will keep right on burning them." And so they probably will, if for no other reason than that burning leaves smell so good.

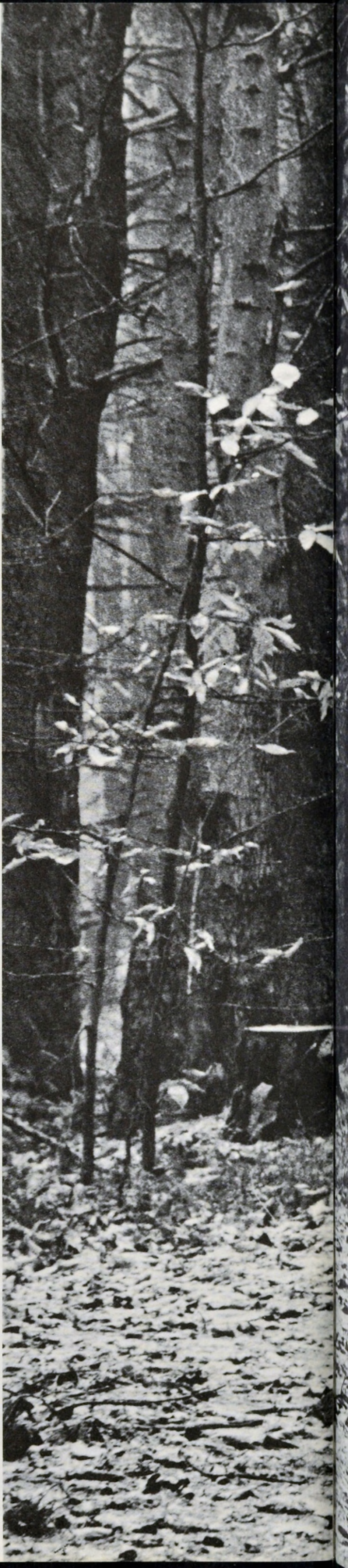
The sounds and smells of an autumn in Vermont are there for the savoring as much as the autumn sights themselves—the flaming foliage, the clear mountain air, the golden days. But to enjoy autumn means more than a drive in a car or a portfolio of pictures.

"I guess it's like the man who had a captive eagle," a photographer told me as we considered the limitations of even the finest color snapshot with its quiet trees "frozen" and its autumn sounds hushed. "This man measured his eagle and weighed it. He found out what food it liked best, how much sleep it needed and how long its talons were. But only after he'd set it free and watched it soar high in the sunshine did he know much about an eagle."

So it is with the autumn season. It has many aspects. Colorful photographs show some of them. So do the paintings at a little art shop along the roadside. So do fall-foliage tours over almost any Vermont road.

But to know it fully, you must meet it on its own terms. Get out of your car and take a stroll. Sniff the breeze and feel the air. Listen. Lie on your back in a meadow. Maybe you'll hear the geese headed south, too. Or pause in a wooded clearing, listening to an unseen creature rustling in the leaves or the brave piping of a single spring peeper who got his months mixed up. At dusk your heart may skip a beat as you hear a series of hoots far off in the woods. Chances are it's an owl. But it *could* be a bear; after all, there's a bear for every mile-and-a-half of the Green Mountain forest, and they hoot often in the fall.

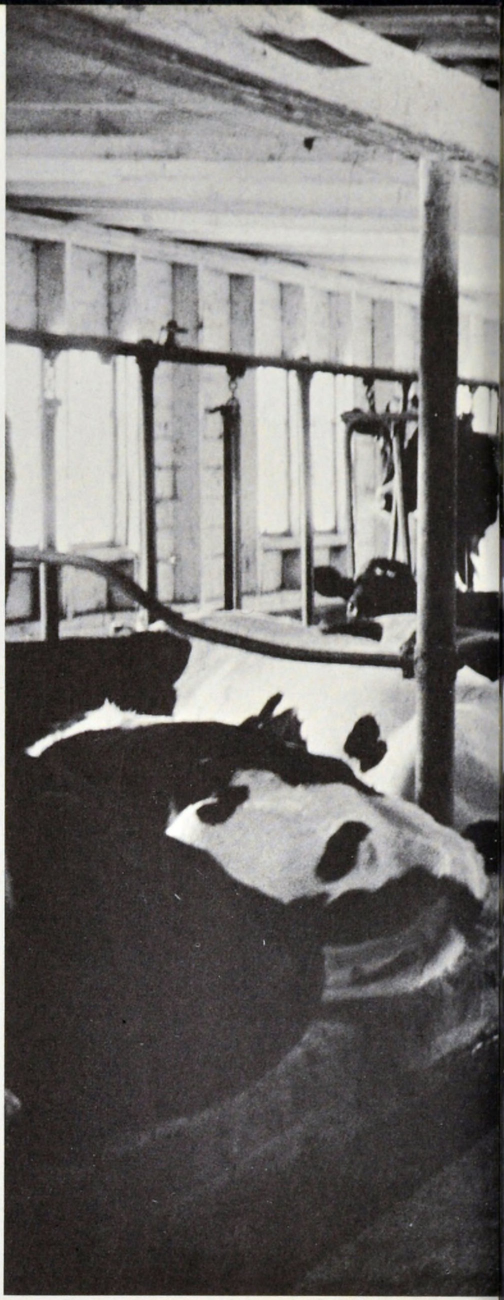
It's things like these that give full dimension to the season—when you let all your senses tell you that it's autumn in Vermont. ꩜



SOME 20,000 COWS
SECURE 80% OF THE LOANS
OF THIS REMARKABLE BANK.
IN OPERATION SINCE 1825,
IT HAS SURVIVED
THE GREAT DEPRESSION,
A TRUE-LIFE GANGSTER HOLD-UP,
AND NOW,
WITH AN ANNUAL TURNOVER
OF MORE THAN
TWO AND A HALF MILLION DOLLARS,
IS WIDELY KNOWN AS

the biggest crossroads Bank in the country

by LOUIS A. LAMOUREUX
Photographs by VERNER REED



Caledonia National Bank President Howard

SOME BANKS have stone lions dormant or unicorns rampant at their portals to inspire awe or lend dignity to the institutions. If the Caledonia National Bank in Danville, (village population 400), went in for escutcheons, statuary and such, a bronze, contented cow couchant might be a fitting figure to greet customers at the door. Cows shaking their stanchions in hundreds of hillside barns or grazing placidly in green pastures may not be considered sacred in Vermont, but they are mighty highly regarded. Directors of the bank in Danville estimate that about 20,000 of them largely secure about 80 percent of the bank's loans.

Back in 1825, when sheep outnumbered both cows and people in the state, the Vermont General Assembly passed a bill

G. Shonyo and Vice-President Adolph G. May inspect property on a farm with ninety head of Holstein cattle, located in Danville.

to incorporate the Bank of Caledonia, having rejected it the year previously. The Bank opened shortly after, the third to be chartered in Vermont, and in 1865 it became a national bank. It has had several locations about the pretty Danville Green, indestructible despite being burned out in 1855 and again in 1886.

One good sized corner room in a house was adequate to carry on its business for several generations, but by the prosperous 1920s, growth demanded more spacious and modern facilities. Having toured New England to inspect several newly-built banks, the directors decided to build after the design of the First National Bank in Peterborough, New Hampshire. At a cost of over $40,000 to construct, the 28 x 50 red brick building with composite stone trim, modified classic colonial in style, sits on a well-kept lawn facing the white columned Danville Town Hall. In this location since November 1926, the Bank has flourished until it has accumulated resources of over 8½ million dollars and has become the largest independent bank in the five northeastern counties of Vermont.

"Biggest crossroads bank in the country," it has been called. The directors modestly refrain from making that claim. But that is the reputation that outsiders have given it. Biggest or not, it is a highly successful operation. Why? The *Wall Street Journal* stated it succinctly in its July 23, 1952 issue in an article heading: " 'Biggest Crossroads Bank' Thrives on Cattle Loans Competitors Don't Want." The Bank has specialized for many generations in cow loans and discounting notes given by farmers to cattle dealers. The Bank knows its cow flesh—four of its six directors are cattle dealers.

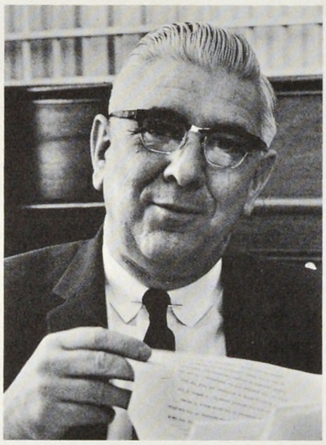
Although dairying has been a leading industry in Vermont for the greater part of a century, small farmers seeking adequate credit for their farm operations have generally found bankers less than enthusiastic. There are several reasons for this. Many bankers regard agricultural paper as risky; they don't want to be bothered with the immense amount of service and paper work which multiplies bookkeeping costs; they are not familiar with the "make or break" problems of dairying; they are oriented towards other credit outlets. One bank in northern Vermont which experienced several farm failures during the Great Depression, is said to have refused to grant any credit to farmers for twenty-five years thereafter. The bank in Danville has realized tidy profits from business turned down by other banks; farmers, having found a friend in need, tend to concentrate all their banking at Danville. Furthermore, lack of strong competition has largely eliminated the element of risk, so that the Bank, to keep within the dairying idiom, can distribute its loans throughout the entire state and "skim the cream" from the top of the farm credit market. Losses average under three-tenths of one percent.

From the time the application for a farm loan goes out until it's paid off, a hefty bundle of paper accumulates. The application and its supporting papers are soon joined by a mortgage on the borrower's cattle, real estate and farm equipment, all of which has to be typed up and recorded with the town clerk. To this fattening package is added what amounts to a cow life insurance policy which the Bank requires the farmer to deposit until the loan is paid up. So that the cattle will not stray off the inventory, more papers increase the file—an annual report to be compared with the previous one. An officer of the Bank, at times, personally counts and checks the condition of the cows. Any considerable change in the personal property means that the mortgage is rewritten—more papers for the file. Then there is the farmer's annual operating and financial statement to be scrutinized, analyzed and filed. Every two weeks, through a peculiar arrangement developed by the Caledonia National Bank, the local creamery withholds a certain percentage of the milk receipts and forwards them to the Bank where they are applied against the farmer's note. Again the Bank performs another paper chore by notifying the farmer of the amount received and his new loan balance. This milk assignment feature assures the Bank of prompt and regular payments. By tying the amount of payment to the receipts, which may fluctuate from one period to the next, the farmer pays what he can best afford. The Bank carries approximately 5,000 notes; a minimum staff efficiently handles all details.

There are many services for which the Bank makes no charge, and these keep one

Adolph G. May

Antonio Lussier



Selden E. Houghton

Howard G. Shonyo

Robert H. Rogers

Kenneth A. Rogers

Dale M. Conley

Who are the directors of the Caledonia National Bank? Vice-president May is a retired St. Johnsbury grain dealer, Mr. Lussier a Hardwick real estate man and cattle dealer, Robert Rogers a cattle dealer in Danville and Kenneth Rogers one in St. Johnsbury, where he also deals in real estate. Mr. Conley is in real estate and insurance in Derby, and President Shonyo is a cattle dealer in Lyndonville. Mr. Houghton is the Caledonia's cashier.

or more of the directors on the road much of the time. All being experts in one phase of dairying or another, they are frequently called for advice in a farm operation. One of the long time directors recalls what he believes was their most unusual service. "One instance that comes to mind is a good loan that the Bank carried on a large farm in the western part of the state for many years. Because of old age and illness, the farmer found himself in serious financial trouble. After the death of the farmer's wife, she being the mainstay of operation, his difficulties broadened to the point where it became necessary to sell the personal property. A member of the board of directors acted as auctioneer and held the sale while the Bank president did the bookkeeping. It was all handled agreeably to everyone concerned with absolutely no cost to the farmer, resulting in the saving of several hundred dollars to him. Eventually the farm was resold through the efforts of the directors and the Bank now carries a loan on the property, it being a very profitable operation once again."

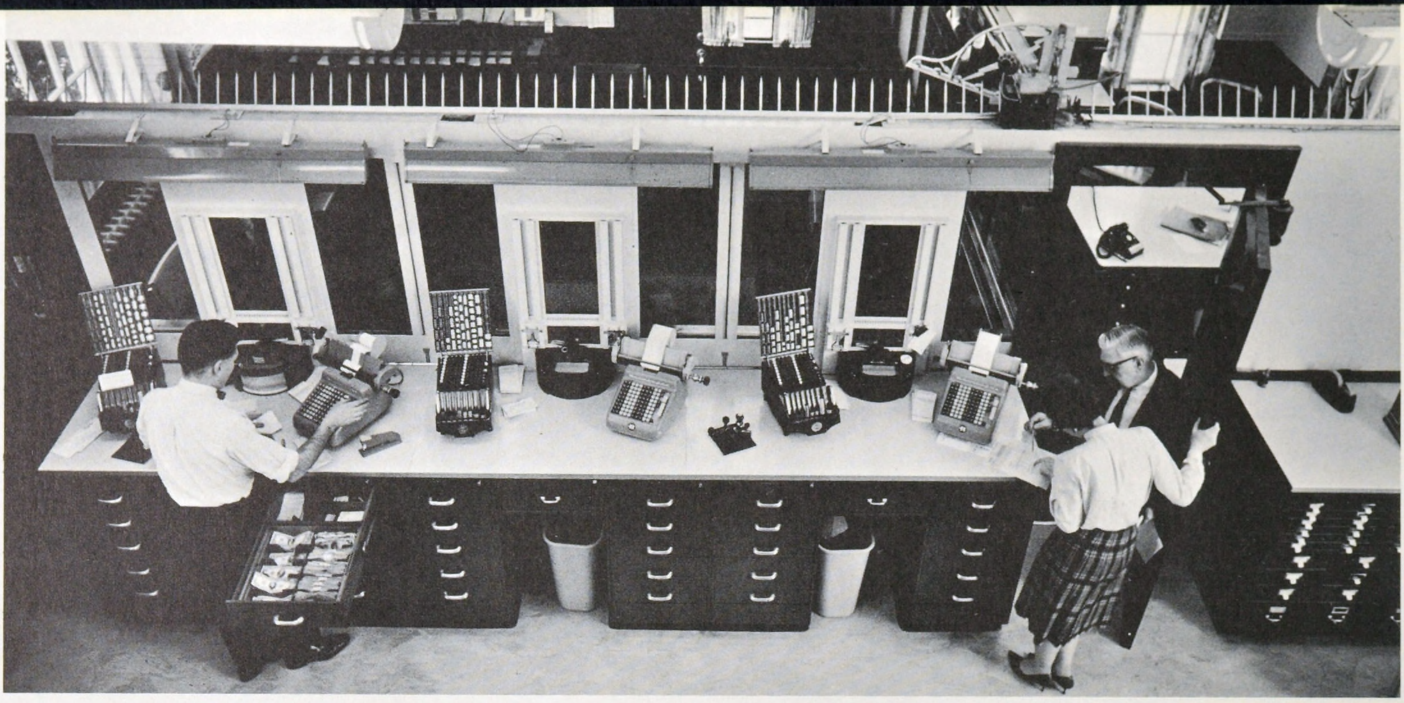
The Caledonia National Bank began to follow the cowpaths to prosperity when Asa (pronounced Acey) Wesson joined the staff as a young man in 1898. By 1900 he was cashier, the managing position, and served in that capacity until he dropped in his tracks in 1961. During those 61 years as cashier, Asa Wesson, shrewd and completely dedicated, became a legend in New England banking circles. It has been said of him that he knew a cow from horns to tail like no other New England banker. He knew cows and he knew his Vermont farmer along with all the adversities and pitfalls of Vermont dairying. Confident that there was a big potential for the Bank in farm credit, he sought out the farmers and sold them loans in the same way that a car salesman goes after customers. Under Asa there was nothing of the starchy banker behind a glass topped mahogany desk with the inclination to say a gruff "no." Dignified and deaconish in appearance, this gentle man had the respect of the roughest farmer, whose respect he returned by keeping them in business through loans when the odds seemed highly unfavorable. He made every loan he granted a personal expression of confidence that challenged the farmer to succeed. And these loans were just as likely to be worked out between Wesson and a worried farmer in the cow stable of a remote farm as in the small, unpretentious office back at the Bank.

During his long tenure, Wesson saw deposits rise into the millions from the mere $40,000 of 1900. The Bank never missed paying a dividend during this time; previously it had failed to do so only once, during the panic of 1893. Not a single mortgage was foreclosed during the depression of the 30's. So sound was its operation, it was the second bank to reopen after the bank holiday in 1933.

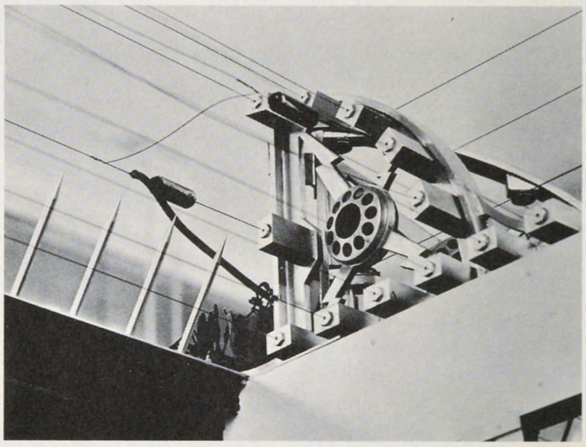
Asa Wesson is gone, but his policies are continued. Selden E. Houghton is cashier now. With over thirty years of service in the Bank, he was schooled to the position as Asa's assistant from the time that he graduated from Danville High School. Like Wesson a native Vermonter, he has the same willingness to listen, to find out how things are going, to sit down, neighbor to neighbor, to work out the solution to a borrower's financial problems. A little hunting or fishing talk interspersed often relieves the tense formality of applying for a loan. It would seem that the office of cashier of the Caledonia National Bank is one of the healthiest in the country; only four have held that position since the bank was nationalized in 1865.

The Bank management believes that the purpose of the bank is to balance safety and service to the community; not only must it be "safe and sound," but "alive," using its resources where they will be productive. Bank president, Louis Shonyo, a cattle dealer of Lyndonville, has expressed the philosophy of the Bank quite simply: "Our loss ratio is low, but if you don't have some losses, you aren't making all the loans you should." Director Kenneth Rogers of St. Johnsbury, also a cattle

Cashier Houghton, right, and Director Kenneth Rogers, visit in the bank lobby with a customer and work into discussion of a loan.



Above, Cashier Houghton steps back from his office to the bank's work area. Lobby and front door show over the bristling partition. At right Teller Ann Somers waits on customer through a heavily protected turn-table window. At far right is part of the intricate system of charged wires, which, connected to outside alarm stations, together with bulletproof glass, protect the bank.



dealer, says: "It is just as bad to turn down a good loan as it is to make a bad one." Acting consistently with this theory, the bank has an annual turnover of more than two and a half million dollars.

Though the Bank has had many prideful firsts, there is one first that it would happily have foregone. On June 4th, 1934, it was robbed in grand gangster style by two men high on the F.B.I.'s "most wanted" list. It was the F.B.I.'s first bank robbery case, since the National Bank Robbery Act had been in effect only two weeks. This is a particularly poignant memory for Houghton who had an agonizing role in the proceedings.

Just two minutes before closing time, when the Bank's doors would have been bolted, a tall, stout man entered the lobby in stiff, new overalls and hat pulled down over his eyes. Though the job had been well "cased," he had an unexpected bit of luck—the latch on the door to the main business area was not snapped. As he was urging the three startled women clerks to prone positions on the floor with threats at gunpoint, arm twisting and kicks, a second bandit, gun in hand, moved stealthily down a corridor to the back office where Houghton was working unaware of the commotion. While he held a large caliber revolver through the grill work on the young Bank employee, the first bandit stepped into the office from the rear and admitted the other. Together their practised hands scooped up all the cash in sight and stuffed it into canvas bags that had been concealed behind the bib of the overalls. Forced to open the inner door of the vault, Houghton was prodded in the ribs with the gun and cuffed when he would not give the answers they wanted.

The bandits were in the Bank an estimated three minutes gathering their loot of $7221.75 in cash, $8025 in bonds, and $3440 in travelers checks. Their movements were brisk and sure; their words "loud, fast and few." Before making their departure in high powered cars manned by other members of the gang, they shoved the four bank employees into a washroom with the parting warning that "the first one to stick his nose out the door will be shot."

FBI agents were rushed to Danville with an album of mug shots. Fred Flint, Caledonia County Sheriff since retired,

suspected from the first that the crime bore the particular mark of Eddie Bentz, a notorious bank robber. The agents were skeptical, believing this job to be "too small time" for Bentz. However, they humored Flint and consented to his bringing along the Bentz circular which he had recently received. Bank employees immediately identified Bentz as the bandit in overalls. It was not until 1936 that he, his brother Ted, and Dan Ripley, all participants in the Danville robbery, were sentenced to long penitentiary terms. The stolen funds were never recovered, but the bank was insured for the loss.

It is ironical that the Bank was robbed for a purpose that, under legitimate circumstances, it had often loaned money—to provide a business with operating capital. Though the Bentz criminal file went back to 1912, the brothers had finally decided to "go straight." Just the previous April, they had incorporated a business in Portland, Maine for the manufacture and distribution of small metal animals to be sold to children through candy stores. Eddie, who lived in first class hotels, mingled with socially prominent men on the golf links, and collected rare books and coins, cleared an annual $100,000 in his underworld pursuits, but was going broke in two months of legitimate business.

The deep impression that this robbery made on officers of the Bank is physically evident today. Probably no bank in Vermont is more elaborately fortified against such a recurrence. Tellers work behind a wall of bullet proof glass, and money is exchanged between teller and customer by turntable. Sensitive wires and microphones are strung about strategically. There are other surprises, which are not quite so evident, awaiting a would-be robber.

Institutions, like individual farmers, have trials that test their strength. In its moments of dramatic peril—the robbery and the Depression—the Bank was not found wanting in that quality, continuing resolutely its ascending course.

The latest report of the Federal Reserve Bank shows an increase in Vermont dairy marketings over the previous year, and total sales of $104,088,000. It looks as though old "Bossy" is going to continue producing Grade A profits for the depositors and stockholders of Caledonia National Bank for quite a spell yet. ∽

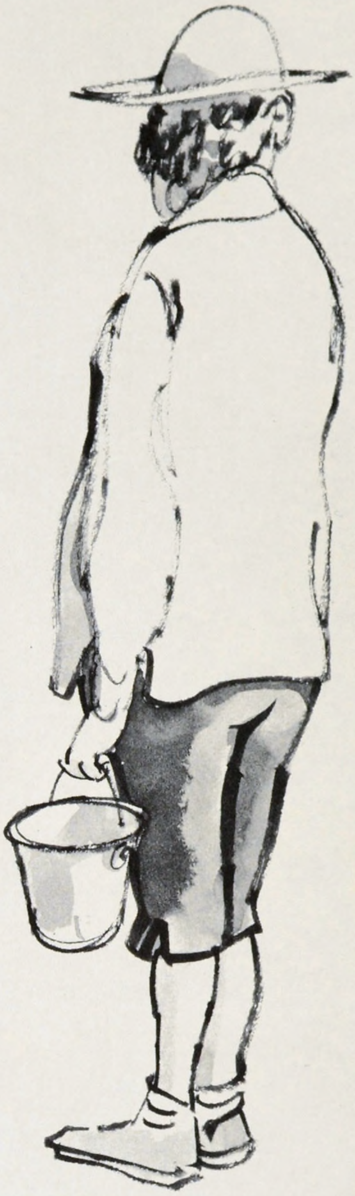
OBLIVIOUS TO SCRATCHES, BRUISES
OR INSECT BITES AND PREOCCUPIED BY
HIS ALL-CONSUMING PURPOSE,

the confirmed Berry Picker

GOES HIS WAY IN THE GRIP OF
HIS OWN PECULIAR MADNESS

by **MARGUERITE WOLF**

Drawings by **ALDREN WATSON**



This article appears as a chapter in Mrs. Wolf's new book, "Anything Can Happen in Vermont," published earlier this year by Wake-Brook House, Coral Gables, Florida.

THEIR NATURAL habitat during the summer months is among the thickets bordering the dirt roads of northern New England though they also may be found at the edge of woodlands and in overgrown pastures. It is difficult to distinguish the male from the female, except by the slightly longer shape of the male, while the female tends to be plumper through the mid-portions. The plumage of those who are indigenous to the area is usually faded blue below with white or khaki across the back, while the migratory species may flaunt gayer colors interspersed with patches of bare skin. The prudent ones may be identified by their long pants and long sleeved shirts, but a prudent berry picker is as rare as an American eagle and even more predatory.

They are unable to read signs saying, "Warning! Test Firing!", "No Trespassing," or "High Voltage Wires." They cannot hear the bellow of a Jersey bull, the wailing of their own young, or the impatient horn honking of their mates.

I know. I am one of them, and though I am miles away from my favorite patches, I can see the handwriting on the stone wall. I know that some soft warm day when time does not have to be measured accurately, I will find myself staring with glazed eyes at the leaning tower of berry baskets in the back hall. There are other favored containers. My father was addicted to honey pails for berrying. He believed that the hand that holds the pail should remain relatively available for pulling down a thorny branch or main-

taining balance in a tricky spot. But we don't buy honey in pails any more. Out of the nebulae of childhood memories, I seem to recall blueberrying with a small milk can, pewter colored, with a pouring lip and a metal top that fitted down inside. This type of container would have its advantages for the very young.

Corralling the pickers is not arranged. It just evolves. My experience is limited, but in every family of my acquaintance there are divided camps on the subject of berry picking. You either are a berry picker or you aren't. You either hate it or are enslaved by it. Weather warnings, threats or rewards won't budge a member of either camp across the great divide.

My husband is not a berry picker. In the first place he doesn't even like blackberries or raspberries. The seeds get in his teeth. Well, not in them, between them. He likes strawberries and blueberries but only when they appear as a *fait accompli* such as a shortcake or a pie. The preliminary encounter between pickers and prickers holds no fascination for him whatever. I have long since abandoned the thought that he might like to come along for the walk or the ride, depending on our destination. He not only wouldn't, but the one time he was persuaded to join us, against his will, the whole enterprise had a diabolical effect on his personality.

As soon as the pickers had scattered among the bushes, he started the car and drove down the road a few hundred yards trying to make us believe he had gone off without us. When this had no effect, he began tossing pebbles into the bushes at safe but startling distances. He commented loudly on the imminence of a thunder-

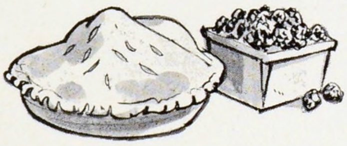
storm and the suitability of the terrain for snakes. I am quite sure that he stopped short of a tantrum only because the picking proved so poor that we gave up reluctantly and agreed to go home.

But he is not the only one in the resistant camp. Our younger daughter prefers almost any activity to berrying. When she was small, however, the thought of staying home alone seemed even more horrifying. She would tag along, removing and losing her sneakers at intervals. She would even carry a tiny basket and trudge up the hill, through the old sugar bush where the summer foliage made a dappled pattern of green and gold on her small blond head. But the basket was pure affectation. She was never known to deposit berries anywhere but in her mouth. In fact, after the first few, she abandoned picking them even to eat, and resorted to swinging on the young maples, making boats out of the leaves and stems, or getting her jersey impaled on a thorny bush.

Our older daughter, however, inherited the berry picking chromosome from me, as I did from my father, and she is as unable to free herself from its power as to change the color of her eyes.

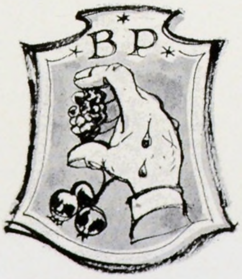
The behavior pattern of the berry picker is familiar to every bearer of the purple stain. When a berry picker walks down a country road, his eyes dart here and there evaluating the terrain in terms of berries. He rarely suggests a berrying expedition. Oddly enough it is the eaters rather than the pickers who instigate that sort of thing. The berry picker, in fact, is apt to keep busy at other tasks and avoid mentioning the ripening fruit, of which he is always acutely aware, in the same way that an alcoholic avoids a cocktail party. And

for the same reason. One berry softly plopped into the basket and he is driven to take another and another. The true addict rarely eats any berries while he picks. He hoards them. The canes reach out and rake his shirt and skin, but he is under temporary anesthesia. One of the irritating habits of the berry picker is his practice of displaying the livid network of scratches on his wrists and ankles, to all non-berry pickers, after he has regained consciousness. He is as surprised and gratified by his wounds as a skier is by a fractured leg on the last day of spring skiing.



But while he may be oblivious to the discomforts of berrying, and apparently preoccupied only with the next bush which surely is laden with the largest and juiciest berries, his other senses are acutely receptive to surrounding stimuli. He hears the drone of the bees and the insistent higher shrill of the cicadas, punctuated by the cawing of one huge sentinel crow at the top of a dead pine tree. He is nourished by the fragrance of milkweed and red clover, heavy sweet summer smells, with all the mellowness of a ripened season. He remembers tiny bluets and wild violets of the past spring, but theirs was a crisp cold fragrance reminiscent of the snow still dampening the moss at their roots. The fragrance of summer is warm and round and full of nectar.

It is this subtle hypnotism of pleasant sensations that lures the berry pickers off, over the stone walls, up through the old sugar bush or back into the hills on long abandoned lumber roads. Like the children of Hamelin, they are deaf to the voices of their families, insensible to pain, unaware of time or responsibility; drawn by a melody unheard by others to a rendezvous they are impelled to keep.



Within an autumn scene such as at West Townshend, at top, may be found the bright beech, above, and the sugar maple, right. Mother, daughter and dog play beneath a red maple. At far right are the sharp outlines of oak leaves.

AS THE GREEN OF THE CHLOROPHYLL FADES FROM OUR NORTHERN TREES
THEY PUT ON GLORIOUS CLOAKS OF CAROTENE AND XANTHOPHYLL,
TANNIN AND ANTHOCYANIN FOR THE ANNUAL

Autumn Fantasia

Story and Photographs by ERNEST GAY

I REMEMBER some years ago seeing a Walt Disney movie in which an artist's paintbrush swept over a New England broad-leaved forest with a master stroke of variegated oils producing an unbelievably colorful combination of dazzling fall colors. I said to myself at the time that it was an eye-grabber of an opening but obviously overdone.

I was wrong. Every time since, when I've had the opportunity to be in Vermont for the "changing of the pigmented guards" and watch nature's most fabulous color epic, I think of Mr. Disney's opening and wonder if maybe he wasn't a bit conservative after all.

The amazing part of it is it's just as thrilling the next year and the year after that. Every fall without fail people come from all over the Northeast and points beyond just to see the leaves—motels and inns are jammed, the neighboring big city newspapers carry running accounts of the colors' progress.

Local chambers of commerce and tourist bureaus recommend fall foliage tours, supply maps and suggest myriads of photographic sites.

Even old timers never seem to lose interest in the spectacle they have watched year after year for decades. Jack Greenwood, the sage of South Newfane, works from sun-up to long after sundown six-and-a-half days a week at his country store and post office and I hear he hasn't had a vacation yet for forty years, but every fall around October 1 he and his wife somehow manage to sneak away and see those leaves.

It has a magic that no motion picture can convey. For many this total canvas is overwhelming and sufficient unto itself, and it becomes difficult to be concerned about the color of individual trees when the forest is stealing the show.

But for those who want to know more about the specific pigments on the canvas we shall try to point out what trees are

what color in nature's botanical mardi gras and give you the plant physiologists' explanation of why some turn yellow, others orange, others red, others purple and still others golden.

If the leaves are red it's apt to be a red maple—others in red are the sumac, the blueberry, the viburnum and the oak. If it's yellow it's probably a birch, or an aspen, or an elm. If it's purple it's an ash or dogwood. If it's orange it's very often a sugar maple, but here we have a very mercurial tree which can also be golden or scarlet or even look like an original creation from dress designer Pucci's sketch pad . . . a striking combination of red-orange-yellow and green, and infinite variations thereof.

The why is a bit more difficult to explain. Over the years many botanists and plant physiologists have been trying to unravel the secrets of the autumn color. They have learned a great deal, but many of the secrets still masked or invisible in leaves of a maple or a birch or an oak die each year on the slopes of a thousand Vermont hills.

What the plant scientists have learned is that Jack Frost is no art lover. At one time it was believed that Jack was nature's "Meister painter." Now the botanists assure us that he's just the opposite—a kind of Faustian poseur who, if given the chance, will drape the countryside with a hard frost and destroy the yellow pigments, prevent the red and in so doing create a dismal brown panorama. Fortunately this seldom happens.

Other facts the plant scientists have learned is that during the growing season of the warmer months the trees produce and use the green pigment chlorophyll in an equilibrium of supply and demand. When autumn arrives the days remain warm but the nights turn cool (but not frosty) and the chlorophyll stops production, destroying this equilibrium. The used up chlorophyll is not replaced and the remaining chlorophyll breaks down into colorless compounds (by a bleaching process that is still part fact and part mystery). As the green fades from the leaves, the yellow pigments *carotene* and *xanthophyll*, sitting patiently in the leaf all summer, begin to overshadow their previously more aggressive green cousins and gradually turn the elm or aspen or birch into an arboreal pound cake.

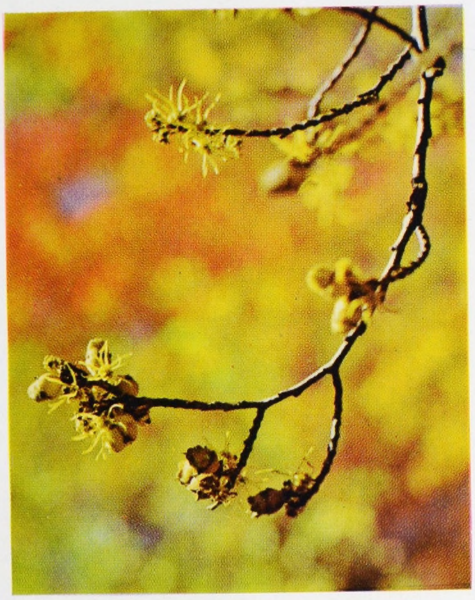
While these "pound cakes" are produced by the *subtraction* of the green pigment, the red and scarlet landscape is produced by the *addition* of a red pigment not present in the leaf before. These red pigments carried in solution in the sap are known as *anthocyanins*. They are formed by a combination of circumstances that also take place in the late summer or early fall of the year and, like the yellow pigments, they require sunny and dry weather during the day with cool but not freezing evening temperatures. Unlike the yellow pigments the *anthocyanins* require some help from the chlorophyll before it breaks down into colorless compounds. Prior to its dismantling, the remaining chlorophyll continues to make starch and sugar which, due to the cool evening temperature, cannot pass from the leaves. As this starch and sugar accumulate by an alchemy as yet unraveled by the plant physiologists, *anthocyanins* are formed. Those red pigments put the red in red cabbage, Harvard beets and radishes. They also tincture the grape, violet, poinsettia and the poppy and even the blue cornflower. So *anthocyanin* in the plant world can be red, purple or blue. The difference is caused by the amount of acidity or alkalinity in the cell sap. If it's acid the color tends to be red. If it's neutral the color tends to be purple. If it's alkaline the color tends to be blue.

One other pigment should be included on our canvas: that of *tannin*, which produces the brown colors in many leaves including the oak, the conifers and the tea. The golden brown of the beech is produced by a combination of *tannin* and *carotene* or *xanthophyll*. *Tannins* are found most often in cell walls and sometimes in the cell sap. These brown pigments are the precursors of the gradual decomposition of the leaves occurring when the unstable pigments of green, yellow, orange and red pass from them through oxidation. The *tannins* always present in the changing leaves take over, and by a process that is also not fully understood, help bring about the subdued somberness of the late brown autumn.

Some day the plant physiologists will know exactly how *tannins* help create that brown autumn, exactly how *anthocyanins* are formed and they will probably discover all the other botanical secrets of how and why the leaves change their color. But for me it will always be a partial answer . . . some of it is beyond science. Some of the answers lie with the artist or the poet or the mystic who hears the sound of different drummers.

So when I think of the fall color I try to remember what science has taught me, but I, too, hear the sound of different drummers. I remember some time ago flying over a whole range of 14,000 ft. mountains in Colorado with a very astute skiing executive who told me that mountains

The sugar maple in Vermont dominates the scene in the autumn. It is shown at top in forest setting and at far left with its leaves catching the rain. The spirea is at left and the big-toothed aspen above it. Above, birch and cherry in Guilford.



Autumn, to everyone's remembrance,
is the fun of playing in a mammoth pile
of leaves. Then the eye seeks out
the details of bright witch hazel
with its pendant nuts, top left,
the hop hornbeam, below, which in summer
carried its delicate hop-like flowers,
and the variegated leaves
of the goldenrod, at left, which turn
long after the yellow flower has gone.
The dried pod of milkweed, above,
splits in the warmth of the sun
and offers its delicate silk and
seeds to the autumn wind.

were anthropomorphic. They each had their own distinct personality. I believe trees are anthropomorphic too.

While roaming over the hundreds of back roads that hide in the Vermont hills, I began to recognize group traits first—what distinguished sugar maples from red maples or elms. Then I began to distinguish the personality differences between one red maple and another—the unique character of an individual beech or birch.

Those with strong group identifications were:

The orangy sugar maple leaf—aristocratic-looking, more points, more curves, more inlets . . . one could taste the maple syrup and see the buckets on Grandfather's tree. With its assured manners and definitive shape, it is a symbol, an image that more than any other leaf (save its relative, the red maple) symbolizes autumn color and its yearly resurrection.

The big-tooth aspen and its delicate, pastel colored leaves, hanging mute and dainty in close family groups of six for fear the wind will blow them away—each branch looking like a geneological chart.

The flying sumac with its many uplifted red wings appearing as if it were about to take off like an African vulture or a wild condor.

The spirea, the Cinderella of the plant world or the frog that turns into the prince. Once a year, it puts on a piquant personality and changes its drab mantle to a lovely pink, orange and yellow color.

The witch hazel with its many-fingered yellow flower and its resident hazelnut spreading out in octopi fashion to lure the light unashamedly onto its naked branch.

The plum, the cherry-colored leaves sticking close to the mother trunk and optimistically veering up and out into the world like Scandinavian ski jumpers.

Then there are the trees which stand out as distinct individuals:

A striped maple branch illuminated by a single ray of light that has penetrated a dark and deep forest. In the distance a blurred maple looking like the embers in a dying fire. One would expect the wolf from "Peter and the Wolf" to come stalking through the embers with teeth bared.

A skeletal cherry birch with most of its leaves gone, but just enough "golden earrings" hanging here and there to give the impression of a partly decorated Christmas tree in a department store window.

A v-shaped white birch looking like an ivory chicken bone standing on an open hillside to give all the yellow, orange and red colors about it a proper perspective.

A graceful upturned beech branch reaching out to be spotlighted as if it were a Thoreauvian Pietà in an outdoor gallery.

A magnificent oak at the edge of a meadow creating its own fantasia with a bank of scarlet leaves here, crimson leaves above, dark green in between, green turning purple below and a small covey of orange-tinted yellow leaves properly bouqueted in the middle with a few branches of its neighbors, the sugar maple and ash, laced here and there for effect.

The distinctly different personalities of three red maples:

The red maple branches whose perfectly balanced tones of red and green and yellow stretched out like a handmade New England quilt.

The scarlet red maple standing like a solitary royal sentinel in a green pasture, easily outshining the other orange and yellow second stringers and making off with all the human plaudits.

The brave red maple leaf bleeding its way through a yellow cloak with raindrop tears beckoning its final days . . . while others more gregarious wrap themselves gently around one another trying to stretch their autumn stay.

And finally, there are those special recollections during the leaf changing panorama that are always a part of the fall festival:

The reflections in a meandering mountain stream with maples, elms and birches pigmenting the slowly moving water in an outdoor Monet mural that looks so much like an impressionist canvas that one wants to pilfer it and cart it back home.

The joys of childhood in a mastodonic leaf pile—to jump in and out in an airy outdoor pillow fight with a pouncing yellow Labrador—no costs, no feathers on the bedroom floor, no parental reprimands—just some time, some energy, some joy.

This joy is the reigning sentiment during the autumn of the painted forest. The real reason for these painted forests may not be *carotene* or *anthocyanin* or warm days and cool nights or chlorophyll and sugar but simply a once-a-year "autumnal fantasia" designed to raise the spirits of the Green Mountain people and their fall guests. Maybe the silent stationary trees have to demonstrate their freedom and individuality to the flying birds and moving mammals with their ephemeral display of fireworks. Maybe if trees could fly or walk or talk, there would be no autumn color. Who knows? I'm glad the trees are as they are, and like the sage of South Newfane, I'm looking forward to seeing them again next year. ∞

The red maple, far left above and in detail, imparts its varied bright colors to the fall spectrum. Its seeds in pairs spin down to find a new growing life next year, or to be gathered, more likely, for winter stores by one of the active residents of the forest. Above, the leaves of a turning red oak decorate the clean lines of the white birch.

VL REPORTS

On the Dance

ERNESTINE STODELLE

IN THE early twentieth century, as all students of Shavian repartee remember, George Bernard Shaw took a sly poke at the "beautiful but dumb" reputation of dancers. The occasion was a conversation in which the American dancer Isadora Duncan proposed to the Irish playwright that they have a child together . . . "with your brains and my body." To which G.B.S. replied with characteristic wit, "Yes, but what if it had my body and your brains!"

Nowadays, Shaw's jest wouldn't have a pretty leg to stand on, at least in America. Beauty and brains often come in neat little packages tied with college diplomas. There's many a good-looking dancer on the stage today with a B.A. and even an M.A. degree. What's more, there is a growing respect for the dance as an art . . . an almost unthinkable attitude forty years ago. Instead of being considered "mere" entertainment, the dance is now regarded as an expression of contemporary culture on a par with its sister arts of music, drama, painting, sculpture, poetry and architecture.

One of the reasons this has come to pass can be pinpointed geographically—if you have a map at your elbow—in the southwest corner of the state of Vermont, just outside of the historic town of Bennington. There, on a high tableland of three hundred rolling acres stands Bennington College for Women, the Alma Mater of many a brainy beauty who teaches, directs or performs in the flourishing modern world of dance. (Ethel Winter, brilliant member of the Martha Graham Dance Company is one; Joan Skinner, choreographer for The Tyrone Guthrie Theatre in Minneapolis is another.)

At Bennington, which has a modest enrollment of three hundred and fifty young women, the liberal arts hold court, and there are nearly one hundred dancing princesses whose scholastic regimen combines the nectar of studying the art of Terpsichore with the ambrosia of academic subjects. Out of this amazing number of dance-interested students, fifty work in what is termed "depth," which involves daily technique classes, courses in theory, philosophy and history of the dance, and dance composition.

"The Cow Jumped Over the Moon" is a childhood fantasy.

Vermont can boast of other important centers of education where the dance receives respectful attention and enthusiastic participation, as in The Putney School in Putney, the University of Vermont, Middlebury College and at the summer sessions of the Vermont Art Center in Manchester, but it is at Bennington that the dance, instead of being an "activity" in the Physical Education Department or a subject in The Fine Arts program, enjoys the academic rank it deserves as one of the liberal arts. Unique among colleges not only in Vermont but in many other sections of the country, Bennington bestows upon the dance the status of a major subject by including it as a basic field of study leading to a B.A. degree. It even has a graduate program in dance.

Responsible for this bold approach to higher education was Bennington's first president, the late Dr. Robert D. Leigh. Acting upon the recommendation of Martha Graham, America's leading dancer, Dr. Leigh engaged Martha Hill of New York University in 1932 to set up a dance program in accordance with the newly founded college's avowed ideals: "The education of intellectually and emotionally mature young women, capable of independent thinking who will be prepared . . . to participate constructively in the affairs of modern society."

Miss Hill, whose artistic gifts were well-seasoned with the salt of common sense, sought to broaden her students' horizons of the dance as a contemporaneous expression of their times by bringing professional artists to Bennington to teach master classes. Thus, throughout the Thirties when the American Modern Dance was coming into being through the creative efforts of Martha Graham, Doris Humphrey, Charles Weidman, Louis Horst, Hanya Holm and other exponents, Bennington kept its finger on the pulse of the newly evolving forms.

"A woman's work is never done" applies to dancers, too, who work at their art summer and winter. With the assistance of dance administrator Mary Jo Shelly, Martha Hill organized a six-week intensive course in modern dance from 1934 till 1942, when war interrupted the exciting project. The high point of the summer's work was the American Dance Festival which brought hundreds of visitors to Vermont from all over the country to see new ballets premiered in Bennington's intimate campus theatre, or, when a larger stage was needed, in the town Armory. The Summer School has since been revived, though Bennington's name is no longer connected with it, on the campus of Connecticut College for Women in New London, Conn., where it operates to this day.

William Bales, present head of Bennington's dance department, came to the college in 1940, and worked in conjunction with Martha Hill until 1952, when Miss Hill left for her present post as director of dance at Juilliard School of Music in New York, at which time Bales took over the department. His background includes degrees from the University of Pittsburgh and the Carnegie Institute of Technology, plus the enviable experience of having been a member of the Doris Humphrey-Charles Weidman Dance Company. A born teacher, Bales is also an organizer with vision. With his dynamic leadership he has attracted other teachers with equally sound professional and academic experience: Jack Moore and Martha Wittman, who are both dancer-choreographers in their own right.

Under the triumvirate's expert guidance, daily classes in technique are held on the cleared auditorium floor of the theatre, which is situated on the third story of The Commons, the college's main building. (Plans are being made to build a larger theatre to fulfill the growing needs of the dance and drama departments.) Bales' classes are fast-paced, thorough and spiced with humor. Moore and Wittman concentrate, for the most part, on long dance phrases that are technically as well as emotionally demanding.

Technique at Bennington is a means to an end, not an end in itself. The purpose of the dance at Bennington is to develop dancer-choreographers who work creatively in new, original forms. All the courses given by the dance department are directed towards stimulating the would-be choreographer's imagination and increasing the artist's means of expression.

Structure and Style provides the all-important backward look at the dance as ritual, as social expression and as spectacle; *Dance Notation* teaches the student how to write down the specific, concrete action of a dance—intangible as it may seem to the viewer—for posterity and immediate reference; *Stagecraft for Dance* and *Music for Dance*, the latter taught by the department's capable composer-accompanist, Josef Wittman, study the best-serving theatrical means for projecting a dance idea. Of course, the main creative problem facing the student choreographer is how to express in terms of rhythm, dynamic movement, time and space (the esthetic elements of dance) a viable idea. This is tackled in *Dance Composition*. And the testing place for all experimental creative work is in the weekly Dance Workshop sessions.

To the dance faculty, the weekly Workshop program is the focal point of dance instruction at Bennington. To the students, the Workshop is the laboratory where their compositions are dissected and analyzed with unsparing criticism by their teachers, and then returned to them, to be put back together again, hopefully for the better . . . a harsh experience at times, but one which yields insight, and forces the students to probe their own resources of expression through movement. Once a composition passes muster, however, the aspiring choreographer has the thrill of presenting it, replete with lights and costumes in the public performances held twice yearly, at the end of each term.

Characteristic of Bennington is the Non-Resident Term, the period from mid-December to mid-March when the college is officially closed and all students are obliged to gain practical experience in chosen fields of interest.

While other dance-oriented students are teaching or working on dance projects, The Bennington College Dance Group, made up mostly of dance majors, goes on tour with a program culled from workshop productions. Usually, the tour begins and ends with performances in the home state of Vermont. The fact that Bennington gives four scholarships yearly to men contributes greatly to the highly diversified program that the group presents in many eastern and some midwestern state colleges, universities and prep schools.

What do dancers dance about, especially college girls whose imaginations are as sparkling as their dancing feet? All sorts of subjects, including modern-day social problems, nature with its infinite wonders, personal relationships, the fascinating worlds of circuses, fairs and vaudeville, the whole historic past seen through the filter of today's awarenesses. The programs of the last two public performances given at Bennington revealed an astonishing range of creativity. Among the many interesting works presented there were dances which described the botanical antics of flowers and insects at springtime, the involved relationship of two girls and a boy caught in the flux of modern city life, the lyrical musings of a strange, Ophelia-like girl, and, along comic lines, there were hilarious *tableaux vivants* of dangerous desert crossings and rococco garden scenes in which eighteenth century statues came to life . . . quite a batch of ideas!

Inspiration for such a wealth of subject material can be traced directly to certain general courses offered at Bennington. Stanley Edgar Hyman's exciting *Myth, Ritual and Literature* is a "must" for dance majors. Stirring dramatic themes are obviously set in motion by Richard Blake's and Louis Carini's courses in basic *Psychology*; while Catharine Osgood Foster's *The Spirit and Techniques of Comedy* is well-known for touching off the sparks that light up many a good, humorous composition. But the "sure thing" to evoke myriad creative responses is poet-professor Ben Belitt's stimulating course, *Poetry and The Imaginative Process*, which makes a searching examination of the mysterious "process by which poetry is written and the imagination is served."

Whichever way you look at the new crop of college-bred dancers—from behind their professors' backs when they are working toward coveted B.A. degrees, or from out front when they are enlivening the stage—there's no doubt about it . . . it's beauty *plus* brains, and Vermont's Bennington has led the way.

Choreography for "American Ballad" is by Judith Beatie.

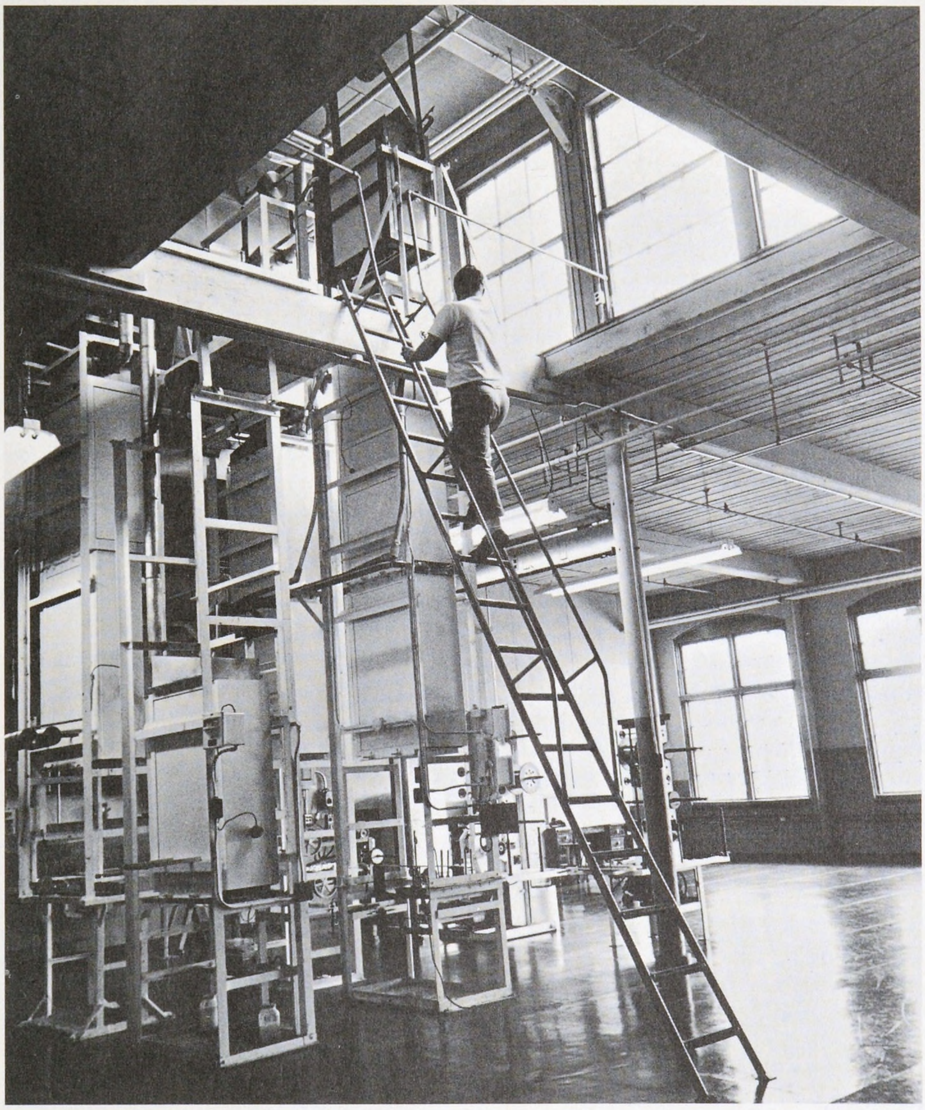


Photo enlargement, left, shows ultra-fine magnet wire at Thermal, on its way to Teflon coating, as it passes over a dime-sized pulley. Two story ovens at SuperTemp, right, bake Teflon coating on fine magnet wire

THOUGH THE MEN WHO MAKE IT CAN'T SAY EXACTLY WHERE IT WILL BE USED

IT'S A SAFE BET THAT

Vermont wire rides into Space

ON VIRTUALLY EVERY TRIP THE U.S. TAKES OUT THERE.

by **FAIRE EDWARDS** *Photographs by* **JOSEPH NOONAN**

ONLY OLD FOLKS now remember when anything electronic was expected to be cumbersome—like the early radio, a big, black box—or even a collection of boxes—strung all 'round with a complex of stiff, fat wires running over the living room table. In those days, the dials on a car or an *airplane* (as we called them) were hitched to mechanical working parts. The driver or pilot read the fuel gauge and acted accordingly. Any initiative and memory was located firmly between a pair of very human ears.

But today, just think how the black boxes have multiplied and changed! At Simmonds Precision Products in Vergennes, they make a fuel gauge that changes itself to adjust from flight in the atmosphere into orbiting in space. Its wonderful circuits make corrections for attitude and temperature and actually control the flow of exotic fuel. While it still shows what it's doing by giving a reading on the control board, it also sends a record of its actions back to earth. And this is only one of a multiplicity of the incredible new gadgets installed in the better and more modern spacecraft!

Because so many of these creatures of electronic wizardry are classified as secret, it has become the custom to refer to them all as *black boxes*—a simplification clearly demonstrating the human mind's ability to rise above its computational betters.

It takes a lot of black boxes to make a spacecraft go, particularly if it's to go on schedule, go where it's supposed to go, and then come home again. All those boxes have to be fitted into a vehicle reasonably sized for launching. That's where miniaturization comes in—the same trend that compressed the components of the old radio into the size of a shirt pocket.

Wire manufactured in Vermont is playing a significant part in this development, particularly in the space effort where wires must be compact, efficient, highly reliable, and able to withstand incredible heat and cold. The black boxes have demanding standards and they're using a lot of Vermont wire.

Three firms within the state are making space-wire: Warren Wire Co., at Pownal; Haveg Super-Temperature Wires, Inc., at Winooski; and Thermal Wire of America, at South Hero, on Grand Isle. They are active competitors at making wire so carefully to exacting specifications that each has received high commendation from government agencies for its share in the space program. Sometimes the men who make it do not know exactly where their wire will be used, but it's a safe bet that Vermont wire rides into space on virtually every trip the U.S. takes 'way out there.

John R. Cook started it in Pownal in 1949, when he moved his fledgeling Warren Wire Company into its own building after two years in a wing of the Cornish Wire Company's plant just over the Massachusetts line. Within three years, Warren was experimenting with sophisticated electronic gear, especially for aircraft. Since then Warren has expanded ten times. Two years ago, it was purchased by General Cable Inc. Now the specialty wires have become so important that the Pownal plant no longer makes the conventional magnet wire that was its first product.

"In producing wire for aircraft," Plant Manager Carleton Parker explained, "if you can get the units small and light enough, the saving is tremendous. When we were working for the TFX program, we were told that a saving of one pound was considered to be worth $600."

A few years before Warren's founding, a lucky accident in Delaware had provided an essential ingredient. A chemist, working at the E. I. DuPont Co., had one of his experiments go wrong. He wound up with a container lined with a substance that wouldn't wash out. In fact, it didn't seem to dissolve in anything. He studied his accidental discovery and found that this material would form no chemical bonds with other materials, hence it would not deteriorate from exposure to most chemicals. It remained the same through amazing amounts of heat and cold.

The new material had another important quality: it proved to be a tremendous non-conductor of electricity. When engineers rate electrical insulating quality, they speak of the *dielectric constant*, and the lower, the better. Air rates at 1; the new compound rated at 2. It could provide more insulation in less space than anything previously known.

DuPont people named their product *Teflon*, a trade name far simpler than its chemical title of *tetrafluorethylene.*

David Binch, SuperTemp's engineer-turned-sales-manager, still describes Teflon with admiration as "fantastic—virtually inert!" The same anti-stick property so convenient in a frying pan, is very handy when wires have to be drawn through a tiny opening. There's no doubt, Teflon still has all kinds of exciting possibilities for the utilization of its unusual properties.

Like many good things, it also has problems. Since it won't dissolve, it was hard to spread around wires. There is another characteristic: Teflon doesn't melt into a liquid form. It goes from a solid into a sort of jell and, when heated further, into a gas. Spreading this stuff onto a wire evenly, to close tolerances, is a very exacting business.

Warren Wire went into Teflon coating at the request of one of its major customers who could not enamel magnet wire with Teflon. At the time it was a new process, and the little Pownal plant was overrun with engineers from DuPont. At one point they were trying to use baby's nipples in the process and ran the local druggist completely out of his supply. At another, they discovered, the hard way, that fluid Teflon could freeze very quickly in a cold snap. Since Teflon does not dissolve, its particles must be diffused in a solution of distilled water with a wetting agent. A moderate sized jugful is worth $80, and can be ruined by freezing. At Warren they still smile over one emergency shipment in a salesman's car, when the driver didn't dare shut off the motor and heater for one instant all the way north from Delaware.

Now, of course, these things seem far away. The machines work smoothly, agitating the liquid just the right amount, the fine wire runs quietly through the enamel and on through the oven that bakes the tiny particles into a solid sheath. Other types of wire have also been developed. In one process, a tape made of Teflon is wound around the wire and then baked solid.

One of the most interesting methods of using the remarkable chemical was developed at Warren in 1955. The company built its own machines, and even constructed some for other manufacturers. In this process—an extrusion method—the bare wire is threaded through a hole running up the center of a cylinder of Teflon. The cylinder is put under pressure and feeds out an even coating onto the wire, which then passes quickly into a curing oven. From the long, cylindrical oven, a firm, smooth wire emerges.

Of the three companies, only Warren extrudes its own metal cores for the wire. All send their wire out for metal plating when required, and all do their own coating or winding. Each firm has its own areas of diversification—hedges against cutbacks in government programs.

At SuperTemp, for example, they're looking for civilian uses for high temperature wires. The company's definition of high temperature wire is any wire that must function at heat above 300° Farenheit. They're looking into the possibility of furnaces and ovens as civilian uses for their wire. Salesmen have been instructed to give a definite allocation of their time to the development of non-military markets.

American Super-Temperature Wires, Inc., was founded in 1956 by Leroy Tourville and several backers. In 1959 the firm was sold to Haveg Industries, which, in turn, was purchased recently by Hercules Powder Co., of Wilmington, Delaware. Tourville was a talented inventor at a time when the development of new processes and the adjustment of existing machinery to new uses was of critical importance. From the start, his firm worked with Teflon and high temperature wires.

Most recent of the three, founded in 1958, is Thermal Wire of America, the only one remaining independent. Its president, Horace W. Corbin, Jr., wanted to go into business on the Champlain Islands—he liked it there. At first he considered opening a marina, but he became fascinated by the possibilities of Teflon. He walked in, he now says, where angels should fear to tread. As Vice-president and Plant Manager, he brought in Marshal A. Moon, who had been in the wire business since 1940. Like their competitors, they have increased their business space, going from 3200 sq. ft. floor-space to 20,000, and from three employees to 65. As diversification, Thermal is now going into production of electronic components, always being careful not to compete with its own customers. This new department is employing women from the neighborhood. Since Thermal is Grand Isle

County's only industry, every new job is greatly valued in the area.

Both SuperTemp and Thermal consider Vermont workers' reputation for high productivity to be a fact. More than any differential in pay scale between the state and some others, this productivity is a helpful competitive factor. Workers expect to give a day's work for a day's pay, they say. Distance from customers seems to be no problem, perhaps because the Burlington airport is so rarely "socked in." Thermal actually finds that its country post office is an advantage: it can accept parcels up to 70 pounds in weight.

Certain threads of similarity run through the three companies. Orders may come in either of two forms: the very clear specifications for materials and colors, tolerances and the like, including minimum test standards—*or* the more challenging form of performance requirements. A customer might ask for wire that could withstand nitric fumes in a vacuum in space, going up to 1200°F. and then cycling down to a possible minus 200°F. It might need to be able to bend over a radius the size of a pencil, or to withstand salt water spray.

Sometimes copper wire is adequate. Often the copper will need to be coated with silver to withstand use and processing temperatures. Copper's tendency to oxidize frequently makes the use of other metals desirable. Nickel may be used if the temperature is to be 525°F. or higher but it won't take solder as well as silver. Sometimes the plating need only be 50 *millionths* of an inch thick to do its job.

The paper work can be incredible. SuperTemp paid $28 merely for postage to mail copies of a technical proposal in connection with the Lunar Excursion Module of Project Apollo.

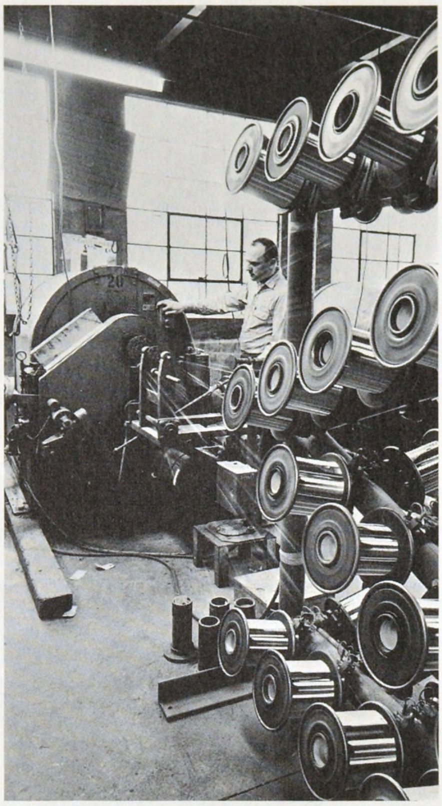
The wire colorings are significant. Of course, the color is not for appearance—it's for identification of each strand at the far end of an installation. The Teflon comes in milky white. For extrusion it's in the form of crystals rather like moth crystals. It must be colored and compressed into the cylinders which are fed into the machines. Because they cannot stand up under heat, vegetable colorings may not be used. Non-organic pigments have been tried out and are now more or less standardized. In air-conditioned rooms, the Teflon and pigments are carefully weighed out and put into jars. Copies of several color systems are kept nearby for reference: standard systems and customers' and government color specifications. Some of the computer manufacturers are using an ever-increasing quantity of Teflon for its high reliability. They, too, have color codes.

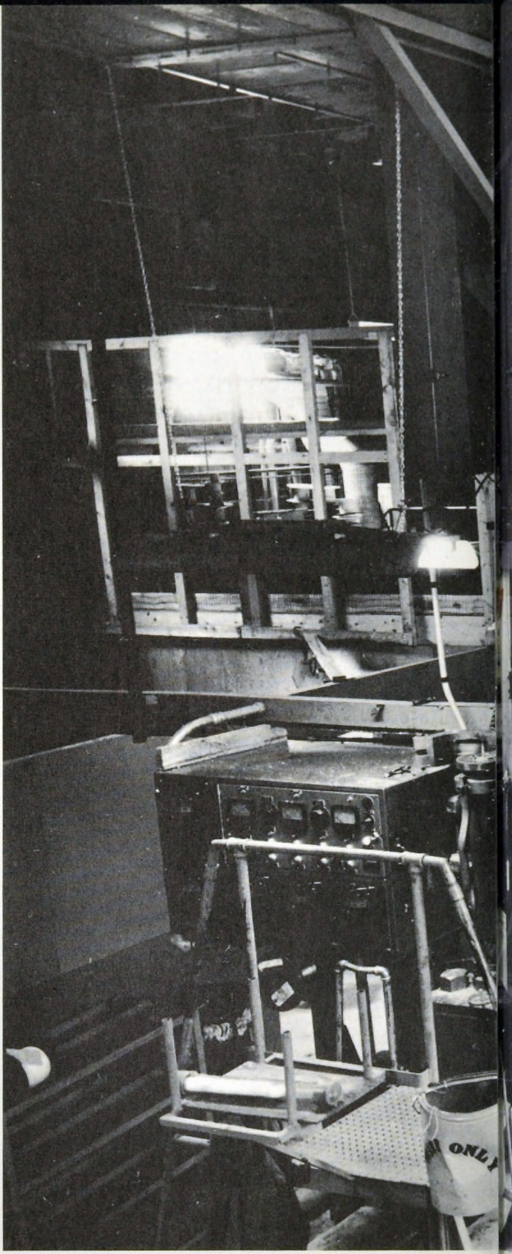
Once the pigment is added, the jar is turned carefully, rolled over and over on its side by a motor to disperse the pigment before the loose material is compressed. At Thermal, Marshal Moon mentioned that this is a critical operation—a statement he kept repeating at one machine after another! The men who know it best find Teflon nothing to take for granted. (At SuperTemp automatic blenders, carefully timed, do the job.)

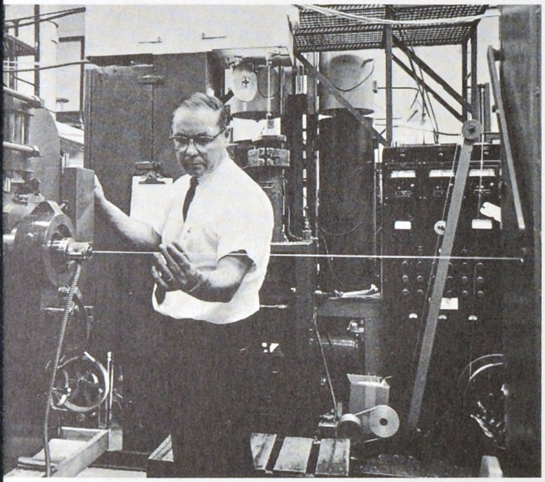
For various uses, the wires may take the form of a single strand or several strands wound together, possibly jacketed. Sometimes they are woven into flat harnesses. As the number of individual wires in any group increases, the color coding becomes more vital. The striped wires are a neat trick. Thermal figured out a Teflon ink for striping.

In some orders, the value of the material is amazing. Thermal Wire did some work on Nirobian Zirconium, super-conductive, super-rare and super-priced. It almost

Warren Wire at Pownal is the only Vermont company to make its own wire. Large spools of it in the foreground have come from the machines beyond.







Mixing machine at Super-Temp, top left, rolls jars of Teflon powder. Above, at Warren, wires race from many spools into large stranding machine. Left, at Thermal wire leaves Teflon extruder. Array of extruders and sintering ovens at right are Super Temp's, where wire spools, opposite below, are water tested.

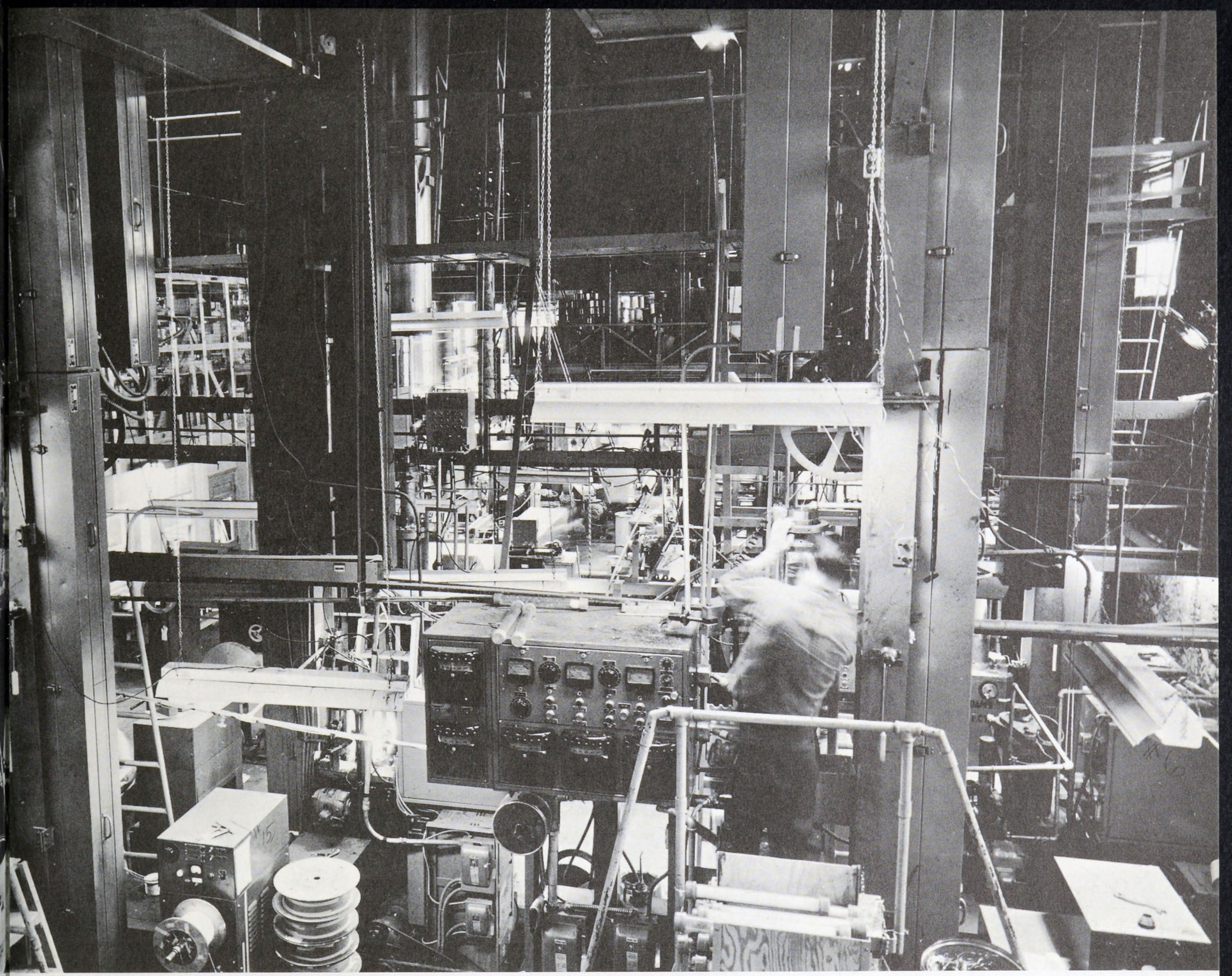
made platinum look like a discount product. Five spools fitted into a box one foot square—and were worth $15,000.

Probably the most precious element in any of the plants is the quality control. There is tremendous pride in the achievement of highly reliable wire. No one has to point out to the workers that a speck of insulation lost at the wrong place could destroy a mission. The extruding machines are set to buzz if the coating has left a bare or weak spot, however tiny. This gives the operator a warning to adjust his machine. The wire is tested and re-tested later. It goes through small jungles of steel bead-chains which make contact through any faulty insulation and set off a rasping buzz. The wire is bent, rubbed, heated—baked, in fact—cooled, twisted—all until it gives up and buzzes. Most dramatic is the ordeal by water. A spool is soaked one hour. Then the ends of the wire are attached to electric contacts and a charge run through them. Every flaw becomes a short circuit—very obvious. Usually the tests are carried far beyond the requirements specified.

Out of a total staff of 200 at Super Temp, 38 men are working full time on quality control. At Warren, "Tony" Parker claims that, "The larger a company is, the greater its quality effort must be." He considers that his testing costs run beyond the manufacturing. Thermal says a small firm cannot grow without the most careful testing of products, both coming and going. They say that, although fifteen pinholes are permitted in a hundred feet of enameled magnet wire, theirs only runs five.

All three companies train their own workers. To be sure, engineers are hired wherever they can be found—and lured by their employers' nearness to outdoor sports. The production workers, however, are local people who have learned their skills on the job.

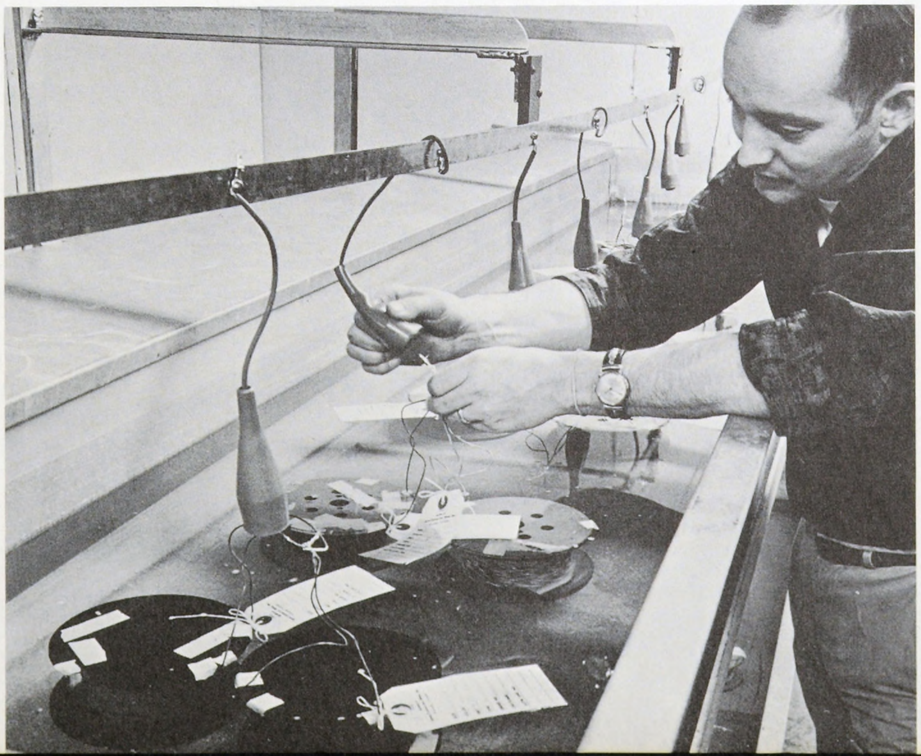
Minor in volume, the medical use of this exotic wire is nonetheless important. The unwillingness of Teflon to combine with other chemicals makes it very resistant to deterioration within living bodies. Its high insulating quality makes possible the use of very fine wires. Both are important in the new interdiscipline of medical electronics. SuperTemp is gratified over its cooperation with the medical college of the University of Vermont. Warren has produced brain probes. Thermal has drawn a generous number of medical orders from as far away as Dublin, Ireland, and, in this country from Yeshiva University, Columbia, Loyola,



and others. Heart pace setters are one known use of their wire.

Teflon is not the only wire covering material used at the plants. Warren produces glass-cloth tape and even coats glass strands with Teflon before weaving them into a braided covering over wire cores. Warren also uses the more common rubber and plastic wires for the cord sets that comprise a part of their non-military program. These, of course, will fly no higher than household or office uses, but they have their prosaic value.

The future? If they know, they aren't telling. One of them hinted that "Today we're talking about practical ways of doing things that would have been unheard of only two years ago." Vermont wire has gone to the Moon, and into human hearts and brains. Only time can uncover its next destination. ◆



BECAUSE OF A HARDWORKING NEWCOMER
TO THE LAKE CHAMPLAIN AREA AND HER LOVE
AND SKILL IN RETRIEVER TRAINING, A CHUNK OF

Benson has gone to the Dogs

AND EVERYONE SEEMS TO BE GLAD OF IT

by MARTHA COVINGTON

Photographs by HANSON CARROLL

FOR A WHILE when I first moved up from the Chesapeake Bay area of Maryland to Benson, Vermont, strangers would drop in every now and then, sit themselves down on the hearth, talk about dogs, and ask, "Just what is it you *do* way up here?" The answer to that was and is, "Just what *don't* I do way up here?"

Except for the fact that the members of my family have four feet, much of the average day is spent doing almost the same tasks any rural housekeeper faces. While other women are making beds, doing dishes, baking bread, sorting laundry, changing diapers or pressing their husbands' shirts, I am scalding feed pans, packing training equipment into the bus, dreaming up dog and cat food combinations which will appeal to the fussy appetite, trying to get paw prints off otherwise white shirts, putting clean newspapers under puppies or fresh cedar bedding in the sleeping boxes.

In addition to serving as chambermaid, and chief cook to my thundering herd, we board dogs—big, small, fat, skinny, fuzzy, smooth—not to mention cats, mice, hamsters and birds. We bathe and groom animals, train the dogs to be gun dogs or retrievers or obedient pets. As a professional handler licensed by the American Kennel Club, I show other people's dogs to their bench championships. So the weekends not spent at field trials in the United States or Canada usually find me trotting around the show rings in New York, Pennsylvania, Maryland, Delaware, Vermont, Maine, New Hampshire or Massachusetts. Evenings I'm either screaming instructions at a group of people enrolled in my obedience class, or I'm sitting cross-legged with a cup of coffee and a cigarette

Martha Covington, at top of page, with some of her friends and pupils. The Labrador puppy on the opposite page, though only six weeks old, clearly knows his heritage and his anxiety to do things right makes you think someday he'll be a great dog. Later he'll learn to sit quietly, as the dogs above are doing, and honor his brothers' retrieve.

beside a whelping box. Spare moments go into bookwork, routine kennel tasks, cooking, cleaning, washing and ironing for people-type creatures. Once a month when the bills are sent out there are the training dog progress reports. They begin: "Dear Mom and Pop."

Free weekends are spent holding training clinics at which owners of retrievers or obedience dogs are taught "which buttons to push" so that they get their money's worth out of their training fees. Free evenings are given to demonstrations of retriever and/or obedience training to local clubs and organizations. It's good to get the dogs out in public.

This is primarily a training operation, but we do breed litters of Goldens, Labradors and Chesapeakes. Long ago I decided that if I ever retire (rich and famous of course) I'll spend my declining years doing nothing but raising puppies—it's my favorite pastime. Retrievers make proud mothers who are very apt to walk up to a visitor in the kennels, take a strange wrist gently but firmly in the mouth, and drag the startled stranger into the nursery. Then they stand back, tails wagging, obviously saying, "There— see what I did? Aren't they wonderful?"

When I first moved to Vermont, I was told that it wouldn't be the work that would wear me out, it would be the interruptions. Well, I don't have much sympathy for the type of call we get on an

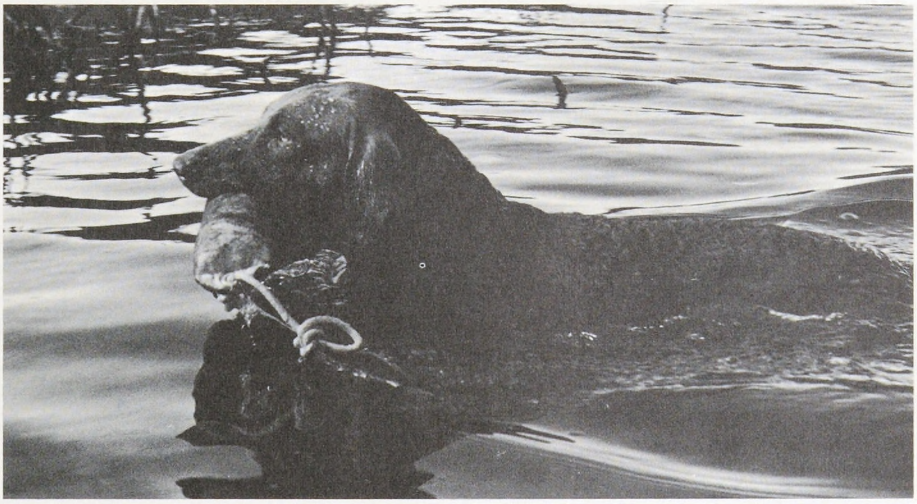
Above, Martha with one of her pupils in a playful and affectionate mood, en route to field workout. Why two whistles? Simple; if one is lost so is contact with the dog, hence the spare. Far right, retrieving is taught with boat bumpers. They last longer than birds.

average of about once a month; the man who wants a one-year-old, registered retriever whose mother was a bench champion and whose father just won the Nationals, steady to shot, delivering to hand, housebroken, taking hand signals and honoring. He'll pay anything for such a dog—up to $50. But I never feel "interrupted" by a call from someone with a pet-type problem; the lady with the Irish Setter who couldn't get her registration papers, the man with the Siamese cat who needed a feline bridegroom in a hurry.

One of the nicest things about this business is that the training of *any* child, be he four-footed or two-footed, is a very personal thing. I know the owners of our "students" as well as a teacher gets to know the members of the P.T.A. Young gun dogs we have started, return to me for advanced training after their first season in the blind. Later on the females often return to be bred, or if I am really lucky, for us to whelp their litters. Since dogs come here from far and wide—from Puerto Rico, Canada and even Great Britain—as well as from all over the United States—our family is truly international.

Things do not always go on smoothly here, believe me. One man spent several hundred dollars to have his standard Poodle trained as a working gun dog. The animal was so outstanding, *Sports Illustrated* did an article on him. But when the man arrived to watch his "wunderhund"

This bouncing puppy is learning to retrieve a training sack. Later, when he's bigger, he'll be taught to swim to a blind retrieve, just as the dog below is so proudly doing. Below, Martha and an assistant, with dogs on heel, going out to a duck cover and marsh training area.



A dog must have the right temperament to plunge into icy water without hesitation. He also must learn to shake only on command or his master will get soaked.

put through his paces, the dog raced out to the bird, sat down and promptly ate it up, before anyone could stop him.

I've always been puzzled to find that we seem to be the only operation of this kind in the state. The Vermont countryside is custom-tailored to retriever training as well as to the conditioning of dogs of any breed. Lake Champlain offers fine duck shooting, and upland game hunting is popular here.

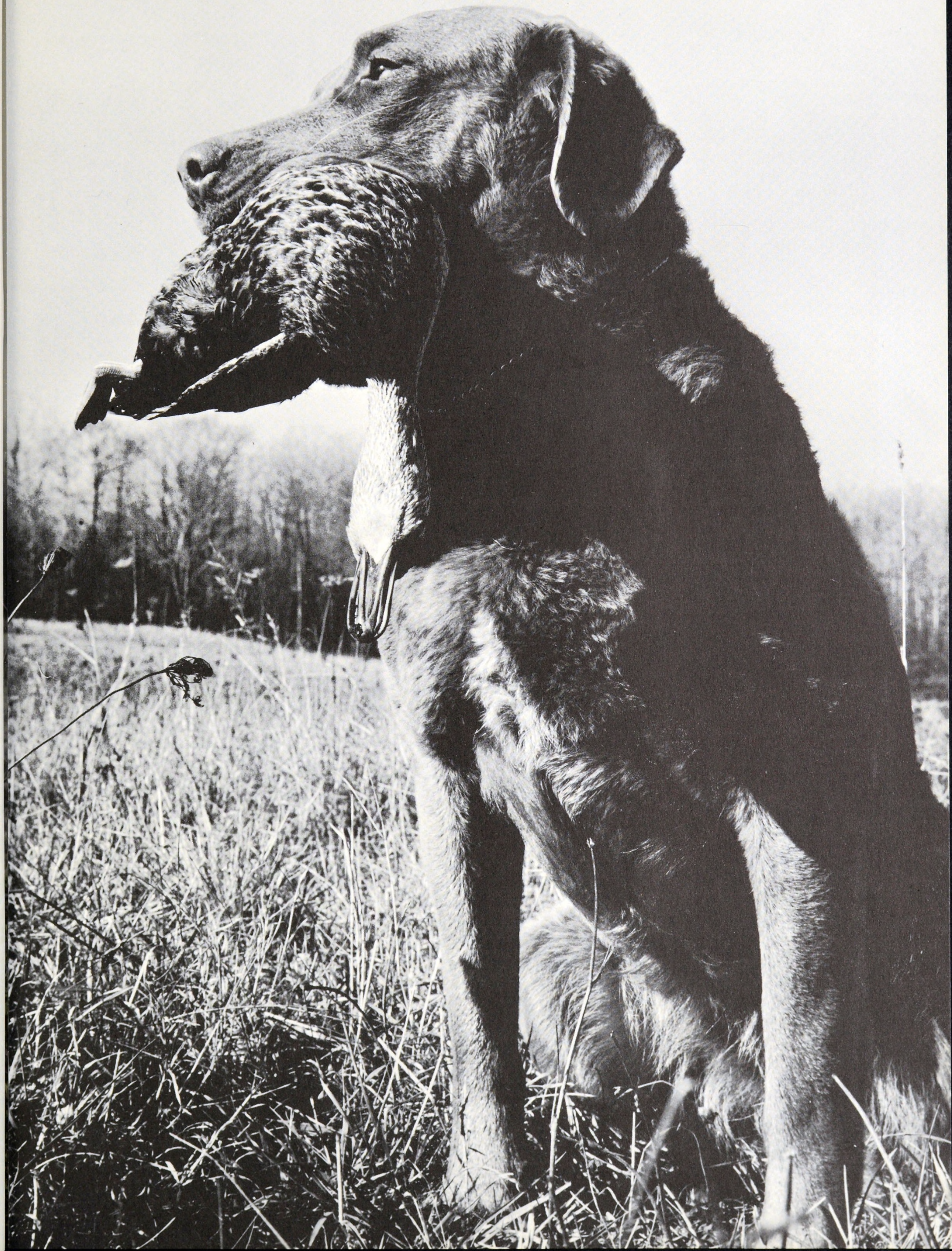
In Maryland, where I came from, it was often a problem to find guns to shoot game over our retrievers. Of course I shoot but it's very difficult to concentrate on a darting bird and a young dog at the same time. Here I only had to spread the word that I'd supply the shells if local bird hunters would shoot for us. Today I have my choice of some of the finest shots I've seen at field trials anywhere, and these men are so appreciative of an opportunity to brush up their shooting, that they won't even let me supply shells any more.

Far from being located off the beaten path in Vermont, we are close to many American field trial and dog show circuits, and are within striking distance of Canadian shows and trials. And I find that Vermont's cold is a lot easier to endure than the wet, penetrating chill of the Chesapeake Bay area.

Best of all, I have walked into a way of life we thought had vanished, a way of life which started this country, made it what it is today. I hope there'll always be the general store, the postmistress who will scold you for wasting pennies on too much postage, and the Town Meeting.

I am learning my Vermont A B C's—that Benson is the Village, Fair Haven the Town and Rutland the City; that breakfast is breakfast, that you have dinner at noon and supper at night. The neighbors are getting used to hearing shotguns and training pistols in the pastures from which used to drift out only the mooing or baaing of farm animals.

Meantime the dogs stay fat which is good for business, and I stay skinny which is good for morale. And as far as I can tell nobody seems particularly unhappy that a small chunk of Benson has gone to the dogs.



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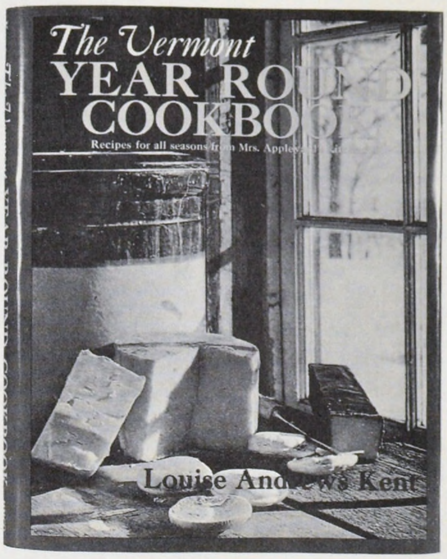

THE VERMONT YEAR ROUND COOKBOOK

THESE "Recipes for all Seasons from Mrs. Appleyard's Kitchen" comprises 224 pages of fascinating cookery lore and delicious Yankee menus, as well as 16 beautiful, page-sized full color plates on Vermont food specialties.

This, the most handsome Vermont book in many years, is written by Louise Andrews Kent of Calais, whose Mrs. Appleyard books have charmed thousands. *Vermont Life* readers, also, since 1961 have relished her special articles on Vermont cookery.

Now, in collaboration with the Magazine and in joint arrangement with Houghton Mifflin Company, Boston, Mrs. Kent has vastly expanded her magazine material for this new volume.

The Vermont Year Round Cookbook follows the country year, commencing with winter, and it includes essay introductions of great beauty for each season. There are special chapters of unique material on the "How and How Not To" of cooking, and on "The Tools of the Trade." Of particular interest, too, is Mrs. Kent's widely researched "Glossary of Cooking Terms."

The main body of this large book comprises personal recipes for a wide variety of foods. These include, but are not limited to, all the traditional Vermont and Yankee dishes, but in Mrs. Appleyard's imaginative hands these simple, classic foods are taken far beyond the usual basics.

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The Vermont Year Round Cookbook

by Louise Andrews Kent
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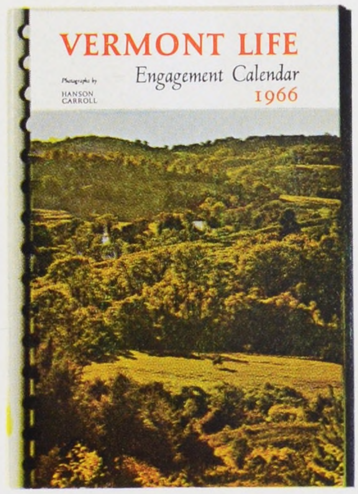

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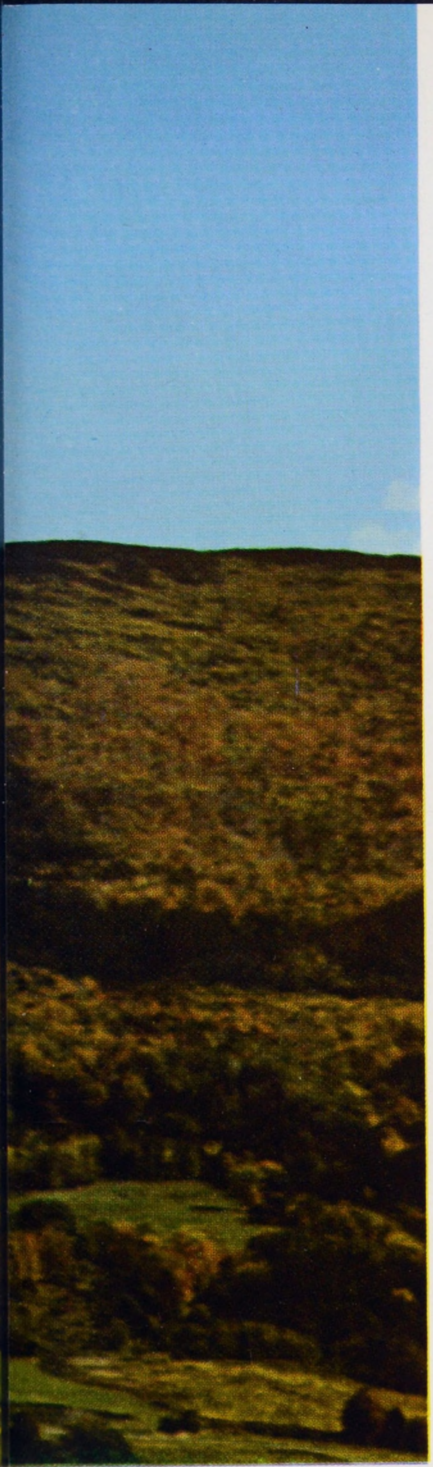
Off, Up and Down—these are the three elements of soaring anywhere. At Sugarbush, however, the potential for height and duration of flight, always over very beautiful and challenging terrain, makes it an altogether different sport.

UP, UP AND UP THE MOTORLESS SAILPLANES SILENTLY FLY,
BORNE ON AN AIRSTREAM THAT OFTEN RISES EIGHT MILES OR MORE
OVER THE EASTERLY SLOPES OF THE GREEN MOUNTAINS.
A CANADIAN PILOT TELLS WHAT IT'S LIKE

to fly free and soar the Wave at

by **D. B. BALLINGER**

Photographs by **HANSON CARROLL**



Sugarbush

When God modelled Vermont, He took both extra time and trouble, since no casual creation could result in country so delightful in the eyes of men. Such was the calibre of my thoughts as I drove deeper into this lovely state, a journey compelled by the siren song of "Soar the Wave at Sugarbush." A twelve hour drive from my home airport at Brantford, Ontario had brought me and my "Skylark" sailplane to the inn where I was to stay. Inside twelve minutes I was made to feel at home there, a feeling enjoyed throughout a stay of twelve days.

Next morning's weather was unusual for October, with a hot, humid and hazy airmass, unconducive to wave formation. However, the Skylark was rigged and a tow taken to 2000 feet. There being no wind, there was no wave, but thermal bubbles of warm air were rising from the valley and by circling within them I soon climbed to a height of 10,000 feet. The extreme haziness limited one's view severely, but two hours of blundering around in the murk proved that I could find my way around the Sugarbush area, so I airbraked down to a landing at Estey airport, near Waitsfield.

A further three days of good thermal soaring followed, with little wind but improving visibility, and much of my time was occupied with one of the joys of mountain flying. My home countryside in Ontario is flat, and low flying would consist of one high speed "beat-up" followed by a climbing turn and quick landing. But, here, one can circle around or skim over peak after peak in descending order in perfect safety.

Overnight the weather changed. Dawning windless in the valley, the mountain tops were refreshing themselves in a cool, invigorating flow of crisp Canadian air as it streamed by at 30 knots. Following the advice of one of the pilots, an early tow was taken at nine in the morning. Releasing at 4700 feet, my rate of climb indicator slowly dropped back to just 100 feet per minute—but there it stayed for over an hour! Two miles downwind of the mountain tops and directly below the leading edge of the lenticular, the wave was easing the 800 lb. Skylark gently up into the sky. The climb assumed all the characteristics of a trip into the twilight zone, as the plane sailed silently in the silken smoothness of the wave. Trimmed to fly herself at minimum sink speed, no control movements were necessary. The lenticular was passed at 8000 feet, plainly forming at the leading edge, dissolving at the rear. Ahead, the mountain range exhibited a text book cap-cloud and foehnwall. The flight continued up past a dark inversion layer into air of unparalleled clarity and a sky acutely blue. Looking down through the wave window I could see a black and white L.K. sailplane while lower still an orange and cream Skylark seemed about to joust head on with Mount Ellen.

The sky below now began to fill in with lenticular clouds. Slowly the whole topside of Vermont developed an ocean of the purest white, a pristine ocean fit to be sailed by gods. In all directions to limitless horizons I flew above a frozen sea, ethereal, apparently immobile and yet threatening a latent power revealed only by the subtly increasing area and depth of the wave clouds. Surely it was at the end of such an ocean that Jason found his Golden Fleece: surely in all his twenty years of wandering Odysseus never sailed a sea of these proportions. The beauty of this unfamiliar sight was enhanced as a 1–23 sailplane slid into view, and like two albatrosses we glissaded effortlessly along our wave. At 11,000 feet I put on oxygen and at 12,000 the Skylark hovered some 200 feet above

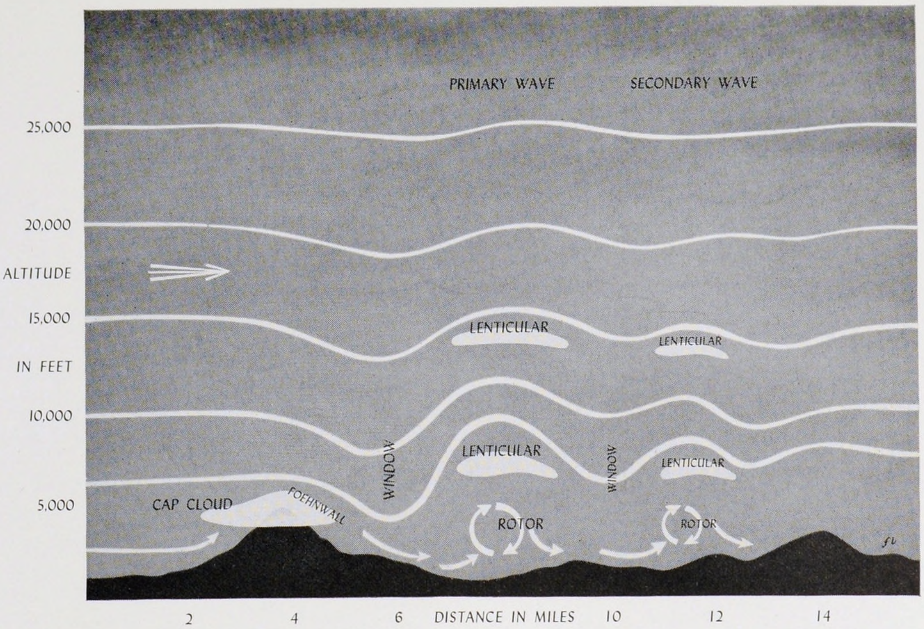
the 1–23, secure in her longer wingspan. The rate of climb had now decayed to zero and one could have believed that at this moment, the whole universe had attained its final equilibrium.

The illusion was shattered by the appearance of a twin-boomed Fairchild transport, forcing its ugly, utilitarian form through the crystal air. Following its passage the 1–23 peeled off, and like a starving gannet after a school of sardines, with airbrakes fully extended he dived vertically downward, shrinking smaller and smaller to a speck of insignificance before finally disappearing.

Below, the cloud cover increased until it became complete. Looking ahead almost into the sun, a thin stratiform sheet could be seen forming, and soon, cumulus heads began to pop up through it, decaying immediately to tumble back down. By the dozens, the hundreds, the thousands, these leviathan mushrooms gurgled up and wobbled down, the whole spectacle being of such ludicrous improbability that I laughed out loud. Certainly no humourless Creator would allow such a comic ballet, and the immensity of nature was brought home with the thought that here a million horsepower was being expended merely to elevate a Skylark and amuse its pilot.

During these hours the wave had improved to give a high point of 13,200 feet. Below, the window was opening again so I wheeled and swung a lazy course downwards and discovered while in the window that lenticular and cumulus clouds were curiously intermixed as though in some secretive symbiosis. The pleasant state of euphoria engendered by the flight began to evaporate as I located myself and dodged around the plump little cumulus filling the valley, prior to landing at Estey. A smooth satisfying flight of over eight hours, which led me to doubt the tales of fearsome turbulence and vicious rotors which were rife. My gain in height had been 8500 feet, insufficient for a 3000 metre Gold badge climb. But early next morning we tried it again.

The 1–23 took off into a mist-filled valley while the rest of us elected to wait for better visibility. An hour later it seemed good enough, but at 4000 feet, with the towplane disappearing into cloud and the mountain tops invisible, I thought better of it and released the tow line. Across the valley from the airport a little wind was trying to kiss a low ridge which, affronted by this importunity, deflected it upwards. I found this gentle upward flow was sufficient to support the Skylark and before long this little ridge resembled Times Square at Saturday noon, as ship after ship joined the gaggle. Several 1–26s ghosted along at impossibly slow speeds while the T.G.2 barged its brutish form along an inviolate course. The Austria and Foka, like skittish minnows threaded their speedy paths around the rest, while the BG12 preferred to play chicken with anyone in its path. Obviously mindful of my anxiety, all these gentlemen kindly kept beneath the Skylark and me. After four abortive attempts I managed to graduate to the main mountain ridge. The thrilling impression of great speed, while working up the side, with the wingtip tucked in closely to the trees, emphasized how swiftly a modern sailplane slips through the air. Soon a dozen planes contentedly cruised the larger beat, making friends with the red-sweatered lady in Scragg Mountain fire lookout tower. My maximum altitude on this day was only 3500 feet. What a surprise on landing to find the 1–23 pilot had achieved



LEE WAVES

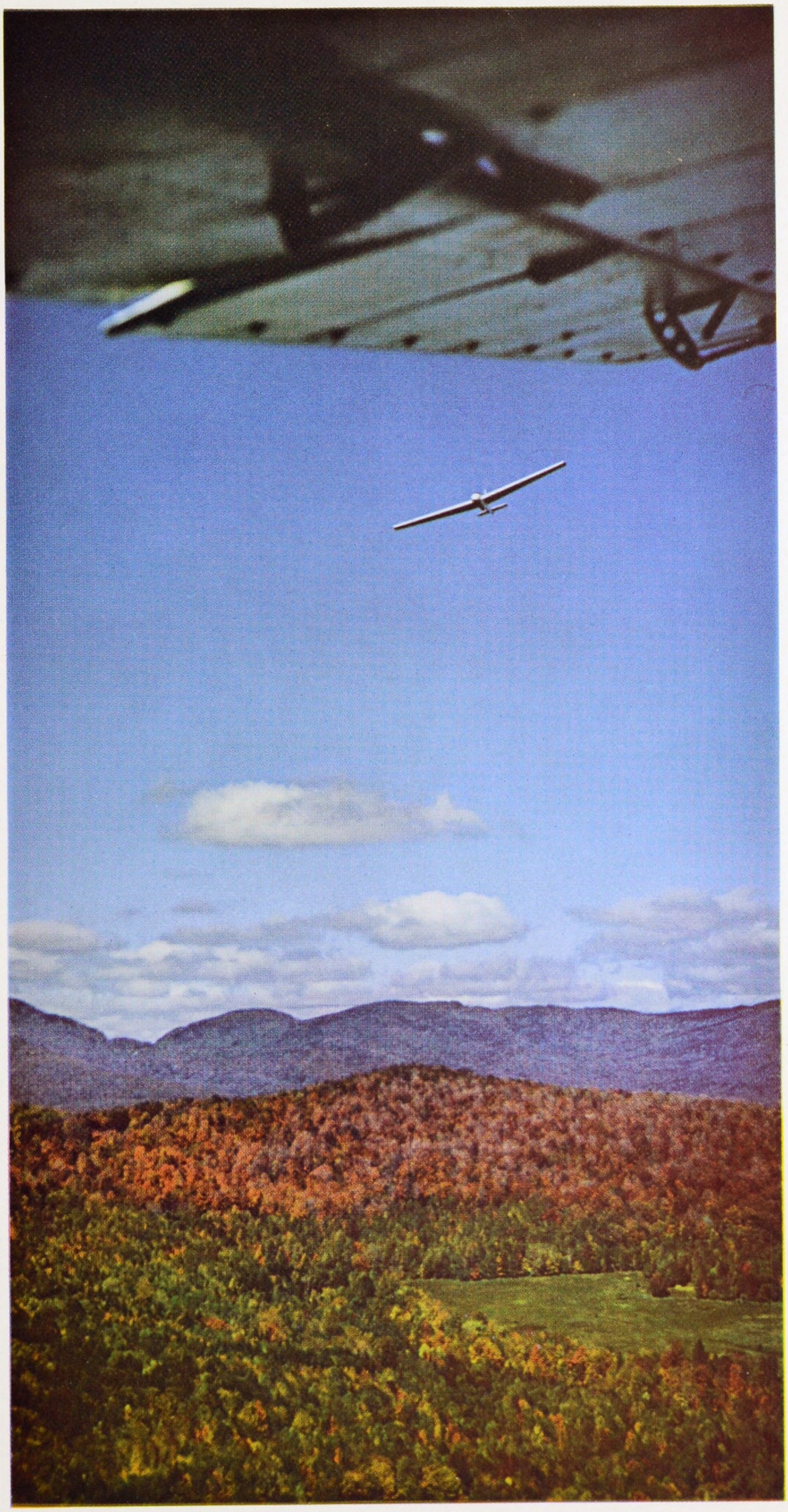
When air flows over a mountain range it may descend sharply down behind the range and then suddenly bounce up almost vertically to form a series of waves in the lee of the mountain. The same effect may be seen downstream of a submerged rock in any stream. But air is more flexible than water and each layer impresses its motion on the layer above, propagating the waves higher and higher until their magnitude stuns the imagination, reaching as they do to heights of over eight miles.

When the air is sufficiently moist, spectacular and distinctive cloud formations develop. Mountain tops disappear into cap-clouds which pour down the mountainside as cloud waterfalls or "foehnwalls." In descending, the cloud dissolves, only to reappear as a lenticular (*lens shaped*) cloud at the crest of the wave.

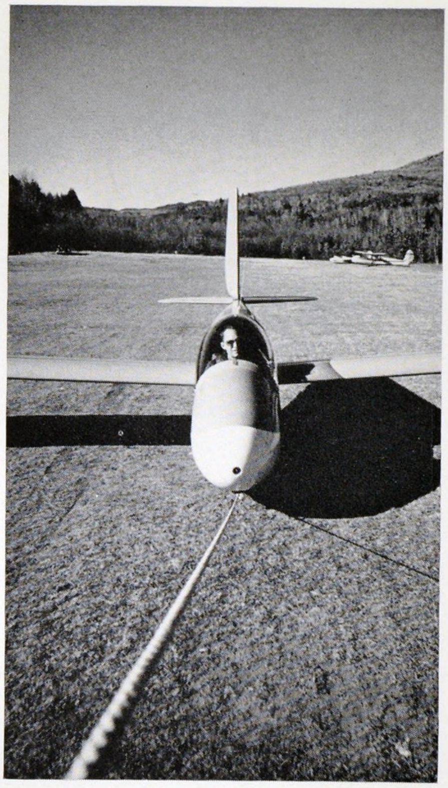
A combination of surface friction and wave pattern will often confine valley air beneath a wave crest, developing a violently turbulent rotor. Its presence is frequently shown by a viciously rotating cloud which is best avoided by aircraft.

The beautiful symmetry of the Green Mountains produces classical lee waves in the prevailing westerly airflow. This phenomenon enables sailplane pilots to reach great altitudes by flying their motorless aircraft in the upgoing edge of the wave. To qualify for international awards the sailplane pilot must make certain gains in altitude without powered assistance. For a silver badge it is 1000 metres (3281 feet), for a gold badge 3000 metres (9843 feet) and, most coveted of all—the diamond for 5000 metres (16,405 feet).

The exploration of the Green Mountain wave system by the Sugarbush Soaring Corporation has provided sailplane pilots of the eastern United States and Canada with the opportunity of obtaining these awards. No longer casting envious eyes at their western friends, eastern pilots now soar their own waves in their rather sophisticated surfboards, making a playground of the Sugarbush skies.



This is soaring—in these views over the Mad River valley and on page 42 over the Sugarbush ski area. Motorless flight isn't always silent nor is it always smooth, but it's as close as a man can come to the birds.



Preparing for teaching flight above, Instructor John Macone explains procedure to student in rear seat. Before take-off, top right, pilot wags sailplane's tail to show he's ready. At right, tow-plane pilot watches glider that has just cast off, slip to his left. Below, down on Estey airstrip plane has just started take-off with sailplane in tow. Opposite page, a glider pilot in a tight banked turn, approaches the end of the airstrip as he comes in to land in the deepening shadows.

his Gold climb this day, in a wave no one else had even suspected! It was a superb flight which earned him everyone's congratulations and not a little champagne.

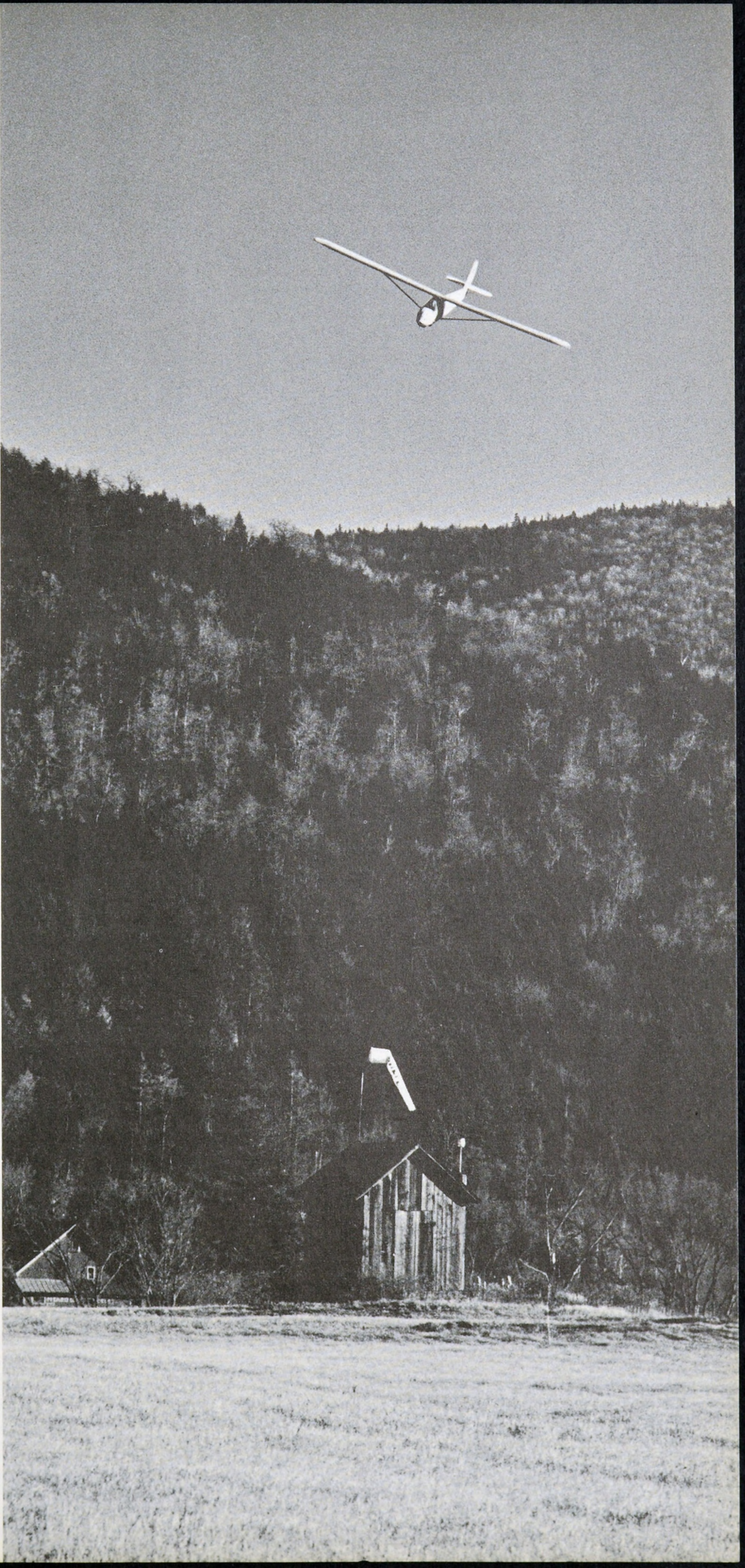
We had now enjoyed thermal, wave and ridge soaring. The following day had the clarity of a cold front passage. We soared in thermals that gave climbs at 1000 feet per minute; all day the picturesque grace of Vermont sparkled around us, parallel ranges of mountains divided by exquisite valleys, while Lake Champlain shimmered like a huge blue jewel in the green setting of its plain. As day's end grew near, the valleys darkened under the lowering sun until the peaks to the east stood out in brilliant orange above their shadowed valleys. As these peaks submerged into the dusk, the other side of the valley lost detail through blue and then violet to a silhouette black. As I whispered along, each peak was haloed with a golden radiance by the setting sun. High in the darkening western sky, a single long lenticular of immaculate shape slowly blazed through the spectrum of sunset colours, yellow, orange and fiery reds to a dusky rose, before dying to a quiet blue-grey. Once more this valley had awed me with the beauty it produced so naturally, so effortlessly. I swooped down, losing height in a sequence of lazy wingovers and steep turns, to put down on the dim strip. No wonder, when asked if any cross-country flights had been made from the valley, one answered innocently "What for? There's no better place to go."

There followed two non-flying days of gales, low cloud and snow, but the forecast for the next day seemed tailored for a wave, and a wave day it was indeed. Over the Green Mountains the wind whistled the trees and cascaded by at forty knots. Before take-off, expecting some turbulence, I did a double-handed cinch on my safety harness. I was never more glad, for this turned out to be a rather wild ride. Right at the runway's end the towplane began a crazy cavorting which I desperately tried to follow. The tow rapidly developed into a series of rocketing zooms, wild rolls and sickening drops. Often full-control movements produced no effect at all. Skylark and Supercub were being slammed around viciously, violently. The accelerometer fluctuated between zero and plus three "g" while the air speed in sympathy flicked uselessly between 30 and 100 miles per hour. At one moment the Supercub shot straight up, the towrope standing vertically past the canopy. I looked upwards at it somewhat stupefied by this novel situation, and while debating what to do the thing fell like a brick in front of me and I found myself gazing down through its canopy at the pilot's fur headpiece.

The recorded twelve minutes of this tow occupied an eternity. Consoled by the fact that I would break up long before the sailplane, exhilarated by the challenge presented, wondering how long before a combination of uncontrollable circumstances broke the towrope, I found that one swiftly developed a fatalistic approach to the whole crazy business. Then with a pronounced "whump" we penetrated into the incredibly oily calmness of the wave, all the more eerie after fighting through the turbulent rotor.

Now, at a steady, solid 600 feet per minute, the altimeter was reeling off the thousands. Up past the lenticular again, base at six, top at eight; again the magnificent view of lenticulars to infinity —oh, one could never tire of this; at 10,000 on with the oxygen. At 15,000 a sleek L.K., beautiful with its red fuselage against the white clouds, streaked ahead below me while making distance upwind. It was getting very cold, the canopy icing up except where I had opened the ventilator a little in front. Below, a giant DC.6, glittering in the crystal clear purity of this airstream, ground its way to the northwest, raping the very air which the Skylark and I seduced to greater advantage. A maximum height of 18,000 over the lenticular, and after three hours of cruising these Olympian heights I decided to land to ensure that I had time to repeat the flight if the recorder had not registered. A plummeting full airbrake descent between capcloud and lenticular soon brought Estey into view. I passed a bright yellow 1–26 on its way up before entering the turbulence again. It was much milder now, but still dropped me several hundred feet at one time, as though in a vacuum. Eighty miles per hour on the approach with full airbrake led to a joyous landing. The Gold badge height was safely recorded.

This had been achievement and enjoyment enough to elate any glider pilot. My cup was full and I little expected it to run over. But on another flight vertically over Mount Mansfield, this time in a cloudless sky, I watched the altimeter nudge past 22,000 feet. Four miles high in the Vermont sky I had mined the most elusive of precious stones—the altitude diamond. Small wonder then that Sugarbush is rapidly becoming a Mecca for aerial prospectors who, against the advice of competent geologists, insist that there are gold, and even diamonds, in these hills. ∽



GRAMP WAS A MAN WHO KNEW HOW TO MAKE ALMOST ANYTHING OUT OF THE WOOD AND OTHER THINGS THAT HE HAD AT HAND. HE GOT HIS KNOWLEDGE OF HERBS FROM A KICKAPOO MEDICINE MAN, BUT I EXPLORED TO REALLY LEARN ABOUT THE INDIANS.

THIS ARTICLE IS A PART OF WALTER NEEDHAM'S "BOOK OF COUNTRY THINGS," PUBLISHED BY THE STEPHEN GREENE PRESS.
THE NEW ILLUSTRATIONS HAVE BEEN DRAWN BY **ROBERT MACLEAN**

When gramp was a boy, this old Kickapoo doctor would come down the river looking for herbs and gramp would go with him.

Gramp is the only man I ever knew, or knew of, that actually helped an Indian collect herbs for Kickapoo Indian medicine. People generally think Kickapoo Indian medicine was just water and burnt sugar, as Indian as you are, merely something to sell for a dollar a bottle at medicine shows. Maybe most of it was, but Gramp made the real thing.

He was probably fifteen or sixteen—old enough to be full of questions—when this old Kickapoo doctor came down the river from the north, looking for herbs. Gramp was interested, and used to go with him. The Indian was looking for some particular herb, and showed Gramp what it was.

Gramp happened to know where there was a lot of it, so he took the old Indian over. After that the old fellow came there often for different herbs, because he found so many. After a while it got so that this old Indian would show him an herb, tell him what it was and when it should be gathered, and ask Gramp to pull some up for him and save it until he could come, because he wouldn't be there at the right season.

So Gramp learned a great many of these herbs, and what the uses were, and how to prepare some of the different concoctions. I wish I hadn't forgotten so much of it; and besides I suppose Gramp didn't tell me all about it, at that.

He did tell me about the Kickapoo doctor curing somebody of tapeworm. He crushed up punkin seeds, and boiled them, and give the fellow the water to drink. Fixed him right up, too.

The principal part of my job with the herbs was to collect the buds from Balm of Gilead poplar. When the buds start to swell in the spring they are filled with a sort of pitch, and if you go around where there is Balm of Gilead poplar you will smell them. It smells like medicine. They grew a good deal on his farm in Vernon; they're kind of a weed tree, and will spring up anywhere. They're not considered anything for fuel or lumber; to the average person they wouldn't look much different from any popple tree.

I used to have to gather the swelling buds, and then Gramp would dry them. Some of them he would just put fresh in a pint bottle, and when the bottle was full of buds he poured it full of grain alcohol and left it to soak. That made a liniment, and he even claimed it was good for colic.

He used most of the buds in his hard salve, and in soft salve or ointment. For the hard salve he would send me out to collect white-pine pitch. If there was any white-pine lumber around, that was the best source to get the pitch. I would scrape it off the end of boards and logs with an old knife and get it into a can. I put the can on the stove, and melted and strained the pitch. Once it was strained through cheesecloth, just enough to take the sawdust and bark out, the pitch from off of logs or lumber would look like the nicest basswood honey you ever saw.

Next Gramp put the pitch on the stove where it wouldn't be too hot, and boiled it down slowly until it would form a rosin in cold water; I used to get some of it to chew for gum. Then he cooked up a mixture of the rosin, mutton tallow, and Balm of Gilead buds. He strained it and poured it in molds—tins, or anything he could get. Mostly he'd try to make it into sticks, like sealing wax.

He used the hard salve on the oxen. When they wore shoes in winter, they would sometimes cut one foot with the other shoe. Gramp would take a match and warm the end of a salve stick to the melted stage, and put some on the cut. It would coat right over and stay there. When I had cracks in my hands from chaps, he would warm hard salve at the fire, and drop a little in the cracks. There it hardened again to form a protective coating, and it was really healing.

The soft salve was an ointment to rub on. It was made without the boiled-down pine pitch—just mutton tallow and Balm of Gilead, and I think sometimes he used butter in it. It was very good stuff.

Gramp was always telling me the medical properties of different plants in the woods, such as pipsissewa and sarsaparilla and rattlesnake plantain, which he called the king of all poisons. It is a beautiful little plant, but I never tried it out to see if he was right about the poison.

Sarsaparilla and sassafras root was used in making root beer. When I was very small he made root beer occasionally, but later years he didn't bother. He also made hop beer. Then his male hop plant died, and so they was all pulled up. Hops has to be of each kind, one male plant set in the center with four or five of the female vines around it. When the male vine dies there will be no more hops.

The herb I know best about is wild turnip or jack-in-the-pulpit. Gramp used to give it to me to start a sweat or cure my cold, and I can tell you it did.

You watch the plants until the berries get ripe or the plant goes to seed. When the berries are red it's right to gather. You pull up the bulbs, and peel them, and put them where they will dry. Once they are dry they're good to keep indefinitely, the same as any spice.

In the winter when you have a chill or are coming down with a cold or grippe or fever, you grate one level teaspoonful of that jack-in-the-pulpit bulb, and mix it up in hot water with milk and sugar. Maple or white sugar, it doesn't make any difference. It's not unpleasant to take, but you certainly will warm up. I think it is equal to Jamaica ginger or anything of that sort. If I was going to prescribe it, I would go a little bit lighter on the ingredients.

Leaf tobacco (which they used to grow a good deal in Vernon), smartweed, and mullein was used for poultices to create a local irritation. If you wanted to warm up any injured place, you would make a poultice out of the mullein leaves and smartweed. Smartweed grows wild around here, and looks so much like heartsease that you can scarcely tell them apart unless you handle the smartweed or get it in your eyes. If you look close at heartsease you can see a very faint black form of a heart in the leaf; that's a pleasanter way to tell the difference.

Pipsissewa

Grandpa always gathered tansy and pennyroyal and catnip to brew up with water for tea. Most all of his herb mixtures was some kind of a brew. He used to make catnip tea and tansy tea for mild fevers or to give to children.

When the beef was butchered, Gramp would save the gall in an earthenware bowl, and dry it down to a black gummy mess that looked a good deal like tar, only not quite so black. For a laxative he would dig out a little of this gummy stuff, and roll it up in a round pellet not quite the size of a Canada pea or a field pea; that was one dose. It was about the size of any pill, except it wasn't sugar coated, and believe me it was bitter: I've taken them.

An Indian product that Gramp told me about but never made was hickory-nut oil. The Indians used it as a substitute for mother's milk or fats of any kind. They done that quite often with butternuts, too. They would take a hollow stump, fill it with hickory nuts, and pound them into a a meal with a stone pestle; then they filled the stump with water and put in hot stones out of the fire. The oil raised to the top, and the shucks stayed on the bottom.

They quite often boiled fish the same way; cooked it with hot stones in a wooden trencher or a clay pot until the meat come off and the bones settled to the bottom.

Gramp used to tell me stories of the various things the Indians made, and how they would catch and spear fish. They came to the Connecticut River for the salmon run and the shad run some time in the spring. They always went to the rapids or falls, and they would generally camp below if there was a suitable place. They always picked their campgrounds where there was clean water and a flat space around it.

The method of spearing salmon was to take a dugout canoe and go up above the falls. When the fish had managed to get up the falls or rapids they were very tired, and it was no trouble at all just to reach over the side and spear them, and bring them into the dugouts. When the fishermen got carried downstream close to the rapids they stopped and threw the fish ashore. The squaws cleaned them and smoked them, and the men went back for another haul.

The shad they used to catch mostly in weirs made out of willow. They would cut willow sticks and set them around in the shallows, hoping to get anything into it they could. The weirs was quite often built near places where the Indians was going to raise corn or their summer crops, because what they didn't eat they used for fertilizer. Fish of a certain size, or a certain amount of fish, went into every hill of corn.

Instead of plowing the cornfields like we do, the Indians burned them over every year. In most of the flat places where I

Indians speared and smoked fish during salmon runs on the Connecticut River

Indians made their dugouts from old-growth pine – burning and chipping them out with stone adzes.

find Indian relics, there's a black line at one level of the soil, and under a glass you see that it's tiny pieces of charcoal.

Canoes was an important subject to the Indians, and most people have some wrong ideas about them. The birchbark canoe was a wonderful piece of construction, but it wasn't as popular as the dugout, and it was sort of a makeshift. A tribe would travel regularly from up north down to the coast over the same route every year, back and forth. The dugouts was kept on the trails, and the Indians would take one dugout as far as a stream went; then, instead of portaging it to the next stream, they would fill the canoe full of stones and bury it in the wet mud. At the next stream they would dig up another dugout, and take that as far as it would go. A whitepine dugout, if it was kept under water, would last probably the life of a man, just like a pumplog.

They made their dugouts from old-growth pine. They would build fires on the log, and burn it and scrape it out with stone adzes. Once they got through the sapwood, the pine would char quite easily. They would work out several pits, and what impressed Grandpa specially was the skillful way they left cross sections in to brace the sides of the canoe, to make it strong enough for any kind of a current or load. The dugouts would run up to forty feet long, but they must have been narrow.

The paper-birch canoes was used on journeys that were not annual. They couldn't be buried, but of course you could make a portage with one. Gramp showed how the Indians used to take measurements with two sticks for the framework of a birch canoe. You hold two sticks together side by side. To measure any distance longer than one of the sticks, you pull one stick out to project the correct distance beyond the other, and hold the two that way while you transfer the measure.

The Indians made their birch canoes with neither hammer, square, saw, nor any kind of measure except the two sticks and their eye. For the framework they laid poles out on the ground in the shape they wanted the gunwales, and drove stakes to hold the poles in the proper curve. Next they bent the ribs, lashed them on to the gunwale poles, and built the skeleton frame of the canoe bottom-side up. Then they put on the birchbark skin, and lashed it with tamarack roots, and finally they pitched the seams with spruce gum. The marvel of it to Gramp was that the first time the canoe was set in the water it would ride on an even keel, and be perfect.

Gramp was always telling me the ways of the Indians making different things, like bows and arrows, and how straight they could shoot. He even made me a bow and arrow one time. The first thing I done was shoot a cat with it, and I got a licking with the bow afterwards.

He made the bow of a hemlock limb, shaved down a very little on the small end, and naturally more on the thick end; it was shaved only on the inside. It was very powerful. The arrow was the dried stalk of a cattail flag. The end of this one was wound with stout thread around a nail that was filed down; of course the Indians used stone points. Mine was feathered with ordinary hen feathers instead of crow feathers, but it would shoot very straight. You take a wing feather, and strip it down from the top on the wide side; you lash two of those opposite each other with regular shoe thread or harness thread—just two. The American Indians never used but two feathers. The butt was notched, but it also had to be wound; the top lashing of the feathers acted as a reinforcement for the notch so that the bowstring wouldn't split it.

The Indians was like any careful workmen about their arrowheads; they had different types for different things. There was one for big game, with a heavy point. The bird points was supposed to be small. They made their war arrows in the shape of a V, without a shank, and worked them down thin where the shaft goes on, as well as sharp around the edges. They were lashed loose enough on the shaft so that if they struck a person, and he pulled out the arrow, the point would be left inside him to create fever.

The New England Indians didn't use poisoned arrows, but they did have a poison that they got from pokeberry. Pokeberry is a pretty-looking berry that makes a nice vermilion stain; it's also called inkberry. Grandpa told me if you took the roots and boiled them, and soaked corn in it, it would poison crows; but he said it was kind of a dirty trick, and I never see him do it.

Gramp said the Indians would shoot half as far as a good gun—maybe up to fifty or seventy-five yards. I suppose an arrow at that distance would be pretty well spent; it would depend a lot on the heft of the head. Some of the Indian bows was about five feet long, which would give you a good pull. The bow he made me was almost as tall as I was, about four feet long. I thought it was too big, but I found I could draw it.

I don't know how the Indians would have stood up against fellows in storybooks like Robin Hood, but they could shoot pretty straight; they even put arrows through squirrels and pigeons. I don't suppose they hit them every time.

Arrows, specially the heads, represented a lot of work, and the Indians would retrieve all they possibly could. Every Indian had his own totem or mark so he could claim his arrows. If there was any others turned up in battle, of course he retrieved those too.

If you'd seen as many stone arrowheads as I have, and tried making them yourself, you'd agree that it was pretty wonderful how the Indians could sit down with no metal tools, and make hundreds of stone points that are all almost identical in design, one after another.

You naturally think of flint and arrowheads together, but they are not necessarily all flint; around here they were made of quartz or any hard stone. Some of them in the far West are obsidian, and some are agate. The chief thing is to pick up a stone that will split or fracture in sheets or layers.

I have discovered from the chips and fragments I've found up and down the river that the Indians started their points exactly the same as a diamond cutter starts a diamond. They laid the quartz, or whatever it was, on another sharp stone, and struck it with something to cleave it and chip it. They put the sharp edge on by flaking off little bits with a staghorn.

The good ones was sharp, all right. An Indian on the warpath wasn't anything you wanted to fool around with much.

Newfane, the shire town of Windham County—where they had John Gale's old ward, the cut-up, in jail—is a real pretty village down in a valley off the West River. It has the county courthouse and the Grange and some other nice white clapboard buildings, and you'd think it had been there since the settlers took the land away from the Indians. It has, too—since just a few years before Gramp was born. The place where Newfane is now used to be called Fayetteville; Newfane was right up on top of Newfane Hill. You'd probably call Newfane Hill a mountain; it's pretty steep, even for these parts. Newfane was built up there for protection from the Indians, and it would take almost a medium tank to attack the old site now.

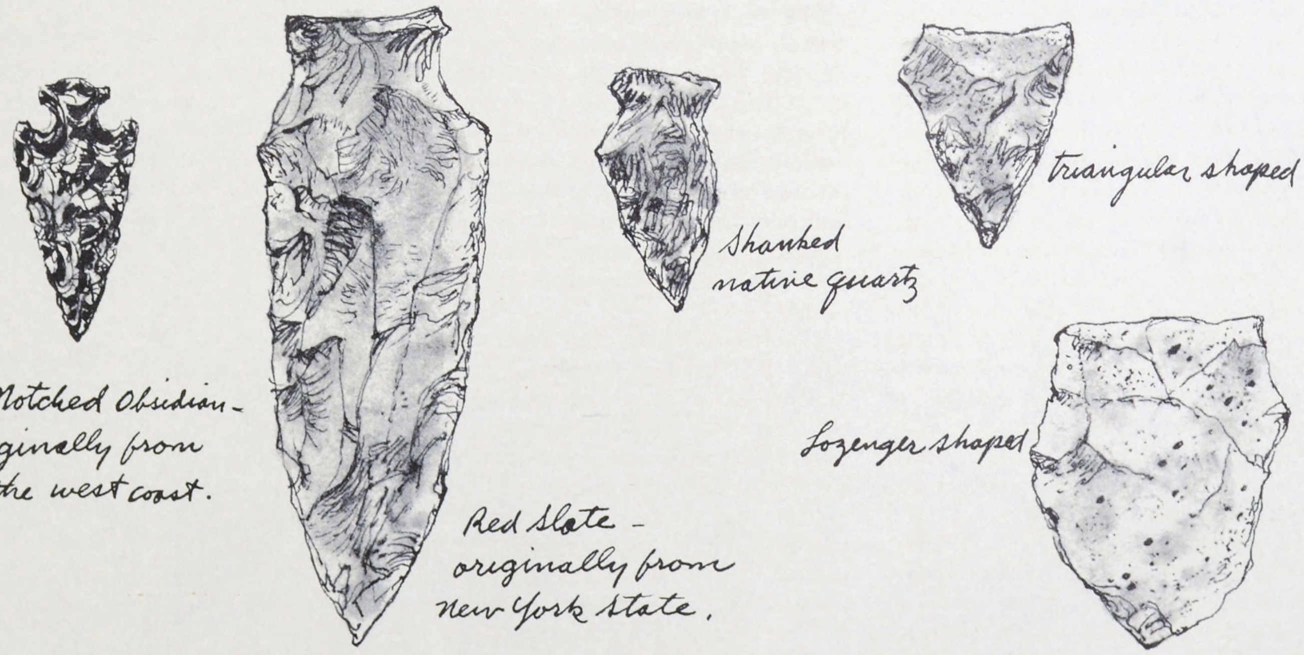
Finally, in 1825, they decided the Indians wasn't going to bother them no more, and it really was a pretty smart climb up Newfane Hill, specially in mud time. So they took apart the buildings, and drawed them down to Fayetteville by ox team, and set them up around the green like you see them now. Every so often somebody tried to move the shire town from Newfane to Brattleboro, but I don't think they'll ever succeed. It used to be one of John Gale's hobbies to stop them.

But his biggest hobby of all was the Indians. The last ten years of his life he and I spent almost every pleasant Sunday together, Indian-relicking. I suppose partly because Gramp had told me things about the Indians, I was the one found most of the stuff at first. Later on John done just as well as I did.

At that, I was long enough getting started. Gramp used to tell me about hoeing up arrow points down at Houghton's Ferry and on the Eli Clark farm up on Putney Road. Eli Clark was some relation by marriage, and he had an old stone house down by the river; it's still there. From the time Gramp told me about hoeing things up on that farm, I always had a great hankering to find an arrow point. I looked for them all my life from the time I was big enough to scout around, only I didn't know how to look, or where to look, or what to look for.

This is about where we say goodbye to Gramp. He got me started on the Indians when I was small, and told me what he learned from his friend the Kickapoo doctor; the Indians before his time he didn't know so much about.

He died before I went off to war in 1917, and I'm afraid you may think most of



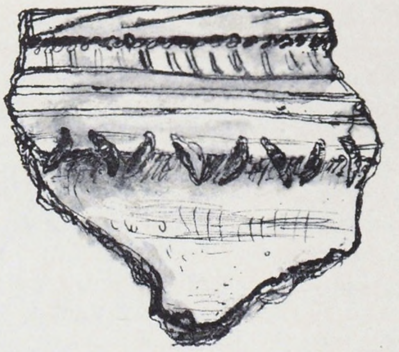
A few of Walter Needham's arrow heads shown actual size
and found within "relicking" distance of his home in Vernon.

what he knew died with him, to judge by how little I remember. The subject of Indians is the only one that I've finally decided I know more about than him, and it took me long enough to find out so that I'm not very stuck up about it. Anyway, these last few pages is from me, not Grandpa Bond.

The first arrow point I ever found was right out here opposite the Tyler Hill Road, up on the ledges. I was about eighteen, and I'd been hunting ever since I was a dozen years old. I was working for John Gale then, the same as I did off and on until twenty years ago, when he died. He gave me a dollar for the arrow point, and he always wore it as a watch fob. He cherished it because it was so snowy white, and was found in Guilford. I'm sorry he never finished his *History of Guilford*, but then I never thought he would. It would have been a lot bigger than most school histories of the United States. A committee got out the *History* in 1961, using most of what he'd written down, and his notes.

I went on hunting for relics right along, but I didn't find no more for nearly twenty-five years. When the Boston and Maine railroad was built on the New Hampshire side of the river, more than fifty years ago, some of the workmen would find relics, so I used to swim the river and go looking; but I still didn't find none.

Finally, after the big flood of '36, John and I went out fishing. We was looking for relics at the same time. The fishing was as good as ever, but the relicking was poor. There was a big washout on the Vernon side of the Connecticut, with the bank all chewed away to sand, and I went up in to look it over.



Algonquin pottery fragment
2⅜" high

In the sand I discovered some white flint chips or quartz chips. They looked funny to me because there was no stone; it was all plain sand.

Then I run on to a mud-colored piece of clay pottery. I made up my mind that it wasn't anything I had seen before. I studied it for a few minutes, and finally concluded it was Indian pottery. I tied up a few pieces in my bandanna handkerchief, and took them right over to Mr. Gale. As long as the wash was on the Vermont side, that got him excited, and we started on our first big Indian-relic hunt. We combed that thirty acres of sand over and over.

I found out later that the pottery we found would be Algonquin. The art is all done in straight lines, never a scroll. There's some handsome designs on the pieces, squares and little dots, but you never find a crooked mark. Evidently they was scraped with a shell, and mostly marked with a shell too. One particular piece I found was stamped all over with little twin dots, evidently made by the end of a split stick. As near as I could figure, it was to represent deer tracks. The tops were invariably crimped with thumbnail and finger, like some women crimp their pies; you can almost see the prints of the nails, although some of the pieces are well worn.

The things we found started John Gale studying old books that he could get hold of. He scared up an old history of Northfield, Massachusetts, giving a description of the corn cellars at South Vernon. He told me there used to be more corn stored in the Indian corn cellars at South Vernon than was being raised then in the whole of Windham County.

I said, "I know where those are."

He says, "It's on the riverbank, and I'd like to know just where—if it's in Vermont or Massachusetts."

I told him I didn't know which side of the line, but anyway it was on the Belden farm. The only thing we had to go by was this book, but we went down there, and sure enough I walked straight to the Indian cellars.

They are pits maybe ten feet square, dug at the foot of a bank, two of them side by side. The bottoms were evidently filled with clay and pounded hard, because there is no trees or brush growing on them even to this day, though they're right in the brush. The earth was thrown up a little around the outside. I suppose the corn was stacked in there, and covered over with something.

The cellars was first discovered by a party that come up the river from Deerfield, I suppose before this territory around here was settled—maybe in 1700 or so.

Offshore a ways upstream from the Belden farm is Pomeroy's Island, just

Indian corn cellars as we found them in South Vernon, April 30th '65 – R.M.

below Vernon Dam. Lieutenant Pomeroy and another party was up from Deerfield in 1689, and they seen a couple of Indians in a canoe. They fired on the Indians, and the Indians tipped over and beat it. Pomeroy thought he would get the canoe, and when he started to, one of the Indians potted him. All Pomeroy got was an island named after his memory.

On the way out from the corn cellars, John Gale and I met the owner of the property; the land had been in the Belden family since Indian times. I told him what we had been looking at. He begun to laugh. "I was shown those by my father," he said, "and I went to show them to my daughter a week or two ago, and I couldn't find them."

As we went up and down the river, John told me what he had read in the book about the fort at Fort Hill, near the New Hampshire end of the Vernon Dam. So we went over there. It's a small round hill, probably not more than a hundred feet across the top. You can see from there to the mouth of Broad Brook or pretty near to Brattleboro, and you can see down the river about half a mile.

It was an Indian fortress. This old book said that they had a log stockade around the top of the hill, and a covered passage that went to the river. As near as we could find out, it was the only permanent location the Indians occupied here in this part of the state. Their land that they farmed was on the Vermont side in the bow of the river, and the fort was on the New Hampshire side. The bow of the river is the only place on the Connecticut where you can stand on the east side of the river and be on the west side, and face downstream and upstream without moving. For a few yards there, the river runs very nearly north. When you stand at the narrowest neck of the point, it isn't more than forty foot wide.

When we went to Fort Hill we could follow traces of everything the book said was there. We found the covered passage, where the ground had sunk in; it came from a spring down on the riverbank, and zigzagged back and forth into the fort on top of the hill.

Then as a protection from the north, there was an earthworks that still stands anywhere from six inches to a foot high, and about eighteen inches thick. It follows all along the riverbank, probably a distance of a thousand yards, to the point where it was destroyed in building the dam. If hostile tribes came from the north, the local Indians could get behind this bank and shoot from there. On the south the bank was about sixty foot high. They had piles of logs at the top, and if the enemy started climbing the bank they would roll logs over, and mow them all down at once.

The historians used to say there was no signs of permanent Indian dwelling places along the Connecticut in Vermont, but they're wrong. I've mentioned some of the things. Another thing, King Philip had a big powwow in Vernon after the famous raid on Lancaster, Massachusetts, when Mrs. Mary White Rowlandson was carried away captive. In her day Vernon was part of West Northfield, Massachusetts; but naturally Vermont didn't exist as Vermont then anyway.

All the relics we picked up after the flood come from the Vermont side. As we got on to the idea, we begun finding things, some that we could name and some that we couldn't. At first I saved them all, and the only thing that ever got away from me was copper beads. I would pick them up in my fingers and crumble them, before I found out what they were. They was old, oxidized sheet copper, rolled into little cylinders—trade copper that the Indians swapped skins for. The beads practically fall into powder if you touch them, and it was quite a while before I realized they wasn't just scrap copper.

I wasn't expecting copper beads, either, because Gramp had told me that the Indians sometimes made beads from volcanic glass. When I found the pottery, I said to John Gale if they made pottery they must have made clay beads. I started looking.

John thought it would be quite a joke if I found a bead in thirty acres of sand.

I said, "I found a blue one, but I guess it's just an ordinary bead."

He said, "Save it." So I put it in my pocketbook.

I said, "I found a white one."

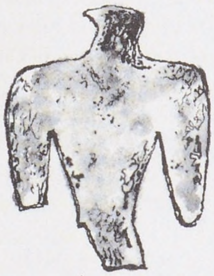
He said, "Let's see it." So we started collecting beads.

Next time, we brought down boxes with screening on the bottom. We would pick out some small obstruction on the ground, like a little root or stub, that water would swirl over in the flood, and where pebbles would collect. Anywhere they collected, I shoveled them up with a trowel and sifted the beads out on the screening.

One copper thing I found was a thunderbird. There's one carved on the rocks on the south bank of the mouth of the West River, too; it's under water now. All the Indians all over the country had the thunderbird. He was supposed to beat the air with his wings, and make it thunder, and when he winked it lightened. When they needed water in the dry country, they got out this bird and drummed up a little rain.

We hunted relics all the way up and down the river from Dummerston to the Massachusetts line, and in the end we got together quite a collection of different things: axes, knives, pottery, adzes, pestles.

A lot of the points that people call spear points are nothing more or less than knives. These points have a shank, and was put in a haft or stick the same as an arrow only bigger, and used as a knife. We found points made of hard red slate that had to come from York State; we found white ones, black ones, brown ones, yellow ones, and different sorts of traprock.



Needhams' copper "Thunderbird" actual size with broken tail and wing.

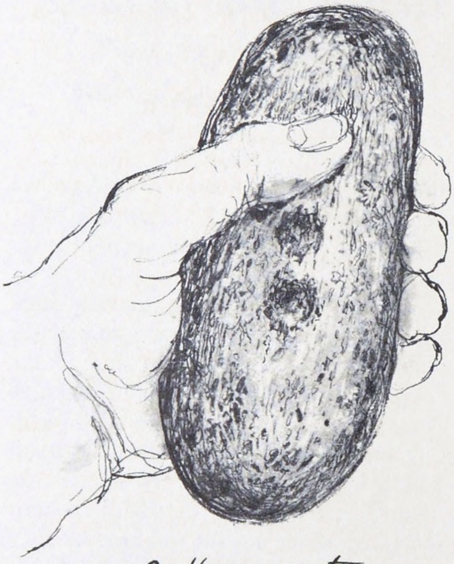
That gave me the idea of making some myself. I tried making them with metal, I tried it with a staghorn the same as the Indians done. I got so I could make as good an arrow point as you would see in any museum. But still you shake it up with some real ones, and you will see the difference. In making one with modern tools you don't get the flaking like they got it, because we just chip it off or hammer it out, while theirs was flaked off or cleaved off like a diamond cutter would cleave it. You have to have a perfect eye for the grain of the stone. Gramp might have been able to make one that would fool you; I can't.

We found quite a number of pestles, and hammerstones by the bushel. I have asked everybody I could find what hammerstones was for; once I asked somebody down to Deerfield in the Historical Society. They have a large collection of pitted stones there.

I asked the man what they hammered with the hammerstones, and he give me a book on the subject. All I found out was that they didn't know as much about it as I did. Hammerstones is kind of a universal mystery; they're found all over the world from Japan to Scandinavia, but nobody knows what they was used for.

Real big stones, weighing maybe forty pounds, we know about. The pits in them come from drilling. You set the butt of the drill in the pit of the stone, and held the work in your fingers while you run the bow with the other hand to turn the drill. Some smaller stones was used the other way around, held by hand to push down on the butt of the drill. All those pits are smooth.

But the hammerstone is pecked out. It has a pit about the size of the end of your little finger, pecked out round, but rough. Sometimes there is twin pits on opposite sides of a stone, as if they would eventually drill through it. There don't seem to be any special kind of stone, just any one of a size to hold in the palm of your hand. Some Indian things I can make a better guess about than a fellow in a museum that never worked with his hands, but the hammerstones have me beat.


a Hammerstone

If it hadn't been for the big flood of 1936, John and I wouldn't ever have found a thing, because we hadn't learned where to dig. We found most of our relics anywhere from ten inches to two or three feet below the present ground level; it had been silted over or plowed over since it was occupied. We found everything below the black line—a thin line, probably not more than a quarter of an inch, but black in white sand. If you traced it back to where the bank had caved off, you could follow it all the way from the level we found the relics on. As I said before, by taking the black under a glass I discovered it was charcoal. After the topsoil was washed down to this black level, within a year or so it all come into wild clover, which is a sure sign of ashes.

Now that I've learned how, I can pretty near count on going out and finding an Indian lodge site or campground whenever I want to. For one thing, the Indians never picked a place where they couldn't get clean fresh water, either a spring near by or a nice stream running into the Connecticut.

I find a spot that looks like good camping ground, with water, and then I begin hunting for burnt stones. The Indians would gather stones about the size of your fist, and bury them in the fire. Down on the flat at the bow of the river there was a lodge that must have had three or four rooms, because there was a hearth in each. You can pick out the firestones because they are burned to the color of brick.

These stones probably served two purposes. If a man wanted to heat something right away, he just dropped these stones in it—probably picked them up with a piece of bark or two sticks. The other purpose, I finally made up my mind the reason for so many stones in a pile was that during the day they were piled in the fire and heated red hot. After the fire went down at night, the stones still threw out heat and warmed the lodge just the same.

Down on the flat, I heated one up and put it in a pail of water; it went in with quite a sizz. When I reached in and picked it out, I sure learned something. Put a four- or five-pound red-hot stone in a pail of water, and you will be very much surprised—the same as I was—how much heat it has to throw off before it will cool down enough so you can pick it up.

When the flood uncovered an Indian fire, the stones and the ashes and the charcoal would stay right there, just as if the fire hadn't been lit more than a year or two ago. Until I got used to finding one, I was never sure if a fire was left by some of my young in-laws from Vernon, or by the Indians that gave the name to Bloody Brook at South Deerfield in 1675.

The old trail across to the west side of Vermont went north as far as Bellows Falls, and then angled northwest—up streams, through Proctorsville Gulf, and over the height of land at Mount Holly—on to Lake Champlain. That was the path from east to west that the Indians followed when they raided Deerfield; on the way back they would go through Guilford, and John always wondered if his white arrowpoint watch fob was one they lost on the way up.

I remember Gramp telling me the Indians never killed game that they didn't need to eat, but he said they was most always hungry anyway. And they never disturbed nut trees or berry vines or anything that would produce food.

It's funny, I put in most of my spare time Indian-relicking, but after I've found the stuff I don't care to have it all kicking around. I give most of it away. Maybe it's because Gramp taught me enough so that I could go out and live in the woods myself, if I had to. I could find things to eat, and make a bow and arrows, and some kind of stone tools, even if not as good as the Indians made. I have fun searching, but the things themselves aren't a novelty to me; if I wanted some, I could make them.

That goes double for the old Indians themselves. We found various bones that we didn't know, and the only way I could tell legs from arms was to try them on. John had a few of those, but he never saved any skulls.

One Sunday I was going along on the sand by the river, looking very close for points and beads and things, when I saw what I concluded must be the top of a skull showing in the sand. It was yellowed over, just a nice medium bald-headed size. I was kind of gazing around for other things, but I reached down to try the skull carefully and see if it was buried so deep that I should have to dig to get it out. I put my hand on it, and I don't know how far I jumped; ten feet, probably. It was hot and soft. It turned out to be a rotten grapefruit rind.

But we did find one old Indian, sitting waiting. He was on the New Hampshire shore, and his lodge wasn't too far away; there was a spring a short distance off, and I dug one or two arrow points out of the place where his lodge had been.

We was fishing, and went over to the spring after a drink, and I discovered one of those firestones they had in their lodges, so I started looking around.

The bank had caved down and overhung a little, and I looked up under the bank. I discovered this Indian, this skeleton, sitting under there, folded up with his head between his knees and his hands down around his feet. He was about the sorriest-looking skeleton I've ever seen. I looked all around to see if they'd buried any of his personal property with him, but he didn't have no more than when he was born.

We caved the bank down over him, and left him. I guess he'll probably stay there until the Great Spirit digs him up again.

VERMONT LIFE *Calendar of Autumn Events*

NOTE: *All dates are inclusive.* This data was compiled last spring, so is subject to change, and is not necessarily complete. *Write Publicity Director, Vermont Development Department, Montpelier, Vermont, for detailed information, supplementary free list and highway map.*

CONTINUING EVENTS

All Year: **Bennington**–Bennington Museum, Grandma Moses Exhib.–Oct. 18, **West Brattleboro**–Vermont Maple Museum; **Montpelier**–Vermont Hist. Society, Spec. Medical, Dental & Surgical Exhib.; **St. Johnsbury**–Athenaeum Museum, Fairbanks Museum, Planetarium; **Waitsfield**–Bundy Art Gallery.

To Aug. 31: **Addison**–Gen. Strong Mansion
To Sept. 5: **Dorset**–Caravan Thr. (Thurs.–Sun.); **Weston**–Weston Playhouse (Thurs.–Sun. 8:30, Sat. 3)
To Sept. 6: **Burlington**–Sun. Eve. Band Cons.; **Grand Isle**–Hyde Log Cabin; **Jay Peak**–Chair Lift (Exc. Tues., weekends thru foliage season); **Mt. Snow**–Chair Lift (Weekends thru foliage season); **Newfane**–Museum (Sun. & Hol.); **Orwell**–Indian Museum (Exc. Mon.); **Rockingham**–Meeting House; **State Beaches**
To Sept. 30: **Weathersfield Ctr.**–Historical Museum (Exc. Mon. & Thurs.); Trout Season.
To Oct. 12: **Vermont State Parks**
To Oct. 13: **Bellows Falls**–Steamtrains 11, 1, 3
To Oct. 15: **Barre**–Maple Museum; Jones Brothers Granite Tours; **Websterville**–Wells-Lamson Quarry Co.; **Brownington**–Old Stone House; **Chester**–Art Show; **Morrisville**–Museum; **St. Johnsbury**–Maple Museum; **So. Woodstock**–School of Photography; **Warren**–Sugarbush Lift.
To Oct. 17: **Proctor**–Marble Exhibit
To Oct. 20: **Shelburne**–Shelburne Museum (9 to 5 p.m. daily); **Plymouth**–Coolidge Homestead & Museum; **Hubbardton**–Battlefield Museum; **Fairfield**–Chester Arthur Birthplace; **Windsor**–Constitution House.
To Oct. 25: **Woodstock**–Hist. Society
To Oct. 31: **Fairlee**–Walker Museum
To Nov. 1: **Reading**–Hist. Museum (Weds.)
To Nov. 14: **Burlington**–Port Kent Ferry; **Larrabee's Point**–Ticonderoga Ferry.
To Nov. 27: **Springfield**–Miller Art Center.
To Dec. 1: **Bennington**–Battle Monument.
To Dec. 30: **Grand Isle**–Plattsburgh Ferry.
To Oct. 17: **Peru**–Big Bromley Chair Lift.
Sept. 23–Oct. 21: **Rutland,** Chaffee Art Gallery–Fall Members Show.
Oct. 1–Nov. 5: Partridge Season.
Oct. 9–Oct. 24: Bow & Arrow Deer Season
Nov. 13–Nov. 28: Regular Deer Season.

SUPPERS AND BAZAARS

AUGUST

26: **E. Corinth**–Chicken Pie Supper 5:30; **Ludlow**–Smorgasbord Supper 5:30 on.
28: **Brownsville**–Church Supper 5:30.
29: **Montgomery**–Old Home Day Dinner 12.
31: **Walden**–Hot Dish Supper 5:30.

SEPTEMBER

1: **Barnet Center**–Turkey Supper & Bazaar 5; **Bristol**–Chicken Pie Supper 5:30, 6:30.
3: **Peacham**–Fall Church Supper 6.
4: **Brownsville**–Church Supper 5:30.
5: **E. Barnard**–Chicken Barbecue 12–3. **Montgomery Ctr.**–Chicken Pie Dinner 12.
11: **Worcester**–Church Bazaar 10–3; **Brownsville**–Church Supper 5:30.
14: **Riverton**–Chicken Pie Dinner & Supper, 12, 5, 6:30 (supper reserv. 233-5731).
16: **So. Ryegate**–Chicken Pie Supper 5; **Marshfield**–Chicken Pie Supper & Sale 5; **Fletcher**–Chicken Pie Supper & Sale 5.
18: **St. Johnsbury Center**–Sale 3, Supper 5; **Brownsville**–Church Supper 5:30; **Chittenden**–Annual Fair & Bazaar; **Waitsfield**–Chicken Pie Supper, 5:30–7:30.
22: **Bristol**–Chicken Pie Supper & Bazaar 5:30.
23: **Sheffield**–Chicken Pie Supper 5:30; **Fairfax**–Chicken Pie Supper 5:30.
25: **Brownsville**–Church Supper 5:30.
29: **E. Arlington**–Chicken Pie Supper 5–7.
30: **Peacham**–Sugar on Snow Luncheon 12, Church Supper 6; **St. Johnsbury**–Sale & Harvest Supper, Methodist Church 5:15.

OCTOBER

1: **Adamant**–Harvest Supper 5 & 6:30 (Reserv. 223-2830).
2: **E. Calais**–Baked Ham Dinner 12, 1, 2 (Reserv. 466-8812); **Brownsville**–Church Supper 5:30; **N. Calais**–New England Boiled Dinner, 5, 6, 7 (Reserv. 223-5412).
3: **Adamant**–Country Breakfast 7:30–9 a.m.
6: **Richmond**–Chicken Pie Supper & Bazaar 5:30.
7: **Tunbridge**–Chicken Pie Supper 5, 6, 7,
8: **New Haven**–Chicken Pie Supper & Bazaar 5, 6, 7; **Waterbury Ctr.**–Chicken Pie Supper & Bazaar 5, 6, 7.
9: **Windsor**–Turkey Supper 5–7; **Brownsville**–Church Supper 5:30; **Greensboro Bend-Stannard** Game Supper, Greensboro Bend Church 5; **Hartland**–Chicken Pie Supper, Sale 5:30–7; **E. Dover**–Harvest Supper 5:30–7:30; **So. Pomfret**–Turkey Supper & Fair 5, 6, 7, 8; **W. Newbury**–Turkey Supper 5; **Brandon**–Chicken Pie Supper 5:30.
12: **Georgia Plain**–Roast Turkey Supper 12–2 & 4:30.
13: **Brandon**–Chicken Pie Supper 5:30.
14: **Manchester Center**–Chicken Pie Supper; **Williamstown**–Chicken Pie Supper 5, 6, 7; **Benson**–Turkey Supper, Sale 5:30.
16: **Brownsville**–Church Supper 5:30.
17: **Montgomery Ctr.**–Dime-a-Dip Dinner 12.
19: **Montgomery Ctr.**–Silver Tea & Sale 2.
23: **Brownsville**–Church Supper 5:30.
26: **St. Albans**–Turkey Supper, Methodist Church 5:30.
29: **Reading**–Turkey Supper 6–12, Old Time Ball 9–2.

NOVEMBER

4: **Marshfield**–Harvest Supper 5; **Peacham**–Fall Supper 6.
7: **Hartland**–Turkey Supper, Five Sittings.
10: **Underhill Flats**–Christmas Bazaar 2, Turkey Supper 5:30.
13: **Cavendish**–Bazaar 3, Chicken Pie Supper 5:30–7; **Montgomery Ctr.**–Covered Dish Supper 6; **Warren**–Deer Hunters' Supper.
13–28: **Newfane**–Hunters' Breakfasts 4:30–7 a.m.; **Brookline**–Hunters' Coffee & Donuts 7:30 a.m.–5:30 p.m.
18: **Barre**–Universalist Church Fair, Dinner 5; **Danville**–Game Supper 5:30.
20: **Plymouth Union**–Game Supper 5–9; **Lincoln**–Venison Supper 5; **Newfane**–Hunters' Supper & Dance 5, 6, 7.

DECEMBER

4: **E. Dover**–Christmas Sale & Silver Tea 2–5; **Peru**–Christmas Sale & supper 5–7.
9: **Montpelier**–St. Vincent's Bazaar 9:30–4:30, Luncheon 11:45 & 12:30.

SPECIAL EVENTS

AUGUST

25: **Addison**–Strong Mansion Pilgrimage.
25–28: **S. Woodstock**–G.M.H.A. 50 Mile Rides; **Hyde Park**–Annual Operetta 8:30.
26–29: **Hartland**–Fair; **Lydonville**–Caledonia County Fair.
27: **Townshend**–Grange Fair.
27–29: **Stratton**–Lawn Tennis Champ.
28: **Newfane**–Museum, Harp Concert, Poetry. **Charlotte**–Pony Club Show 8:30–5:30.
30–Sept. 4: **Essex Jct.**–Champlain Valley Expos.
30: **Weston**–Ballet 8:30.

SEPTEMBER

1–4: **So. Woodstock**–100 Mile Trail Ride.
4: **Ludlow**–Art Show & Childrens' Pet show; **Arlington**–Garden Club Auction.
4–6: **Springfield**–Golf Club Champ.
5: **Windsor**–Horse Show.
5–11: **Rutland**–Fair
6: **Guilford**–Fair & Old Home Day.
11–13: **Manchester**–Art Center Fall Exhib.
17–19: **Tunbridge**–Fair
18: **Wilmington**–Farmers' Day Fair.
18–25: **Brattleboro–Putney**–Art Shows.
21: **Pomfret**–Hist. Society Sketch.
24: **Brandon**–Ayrshire Sale, Noon; **Wells River**–Vt. Ayrshire Field Day, Show 12.
24–26: **Stowe**–Folk Music & Dance Fest.
26: **Pomfret**–Hist. Society, Field Trip.
30–Oct. 10: **Bennington**–Fall Foliage Fest.

OCTOBER

1: **Adamant**–Old-fashioned Square Dance.
1–3: **Danville**–American Dowsers Conv.
2: **Calais**–Exhibit & Quilt Sale; **Johnson**–Annual Fall Festival Day.
2–3: **Stowe**–Fly-in; **Bellows Falls**–Outdoor Art Exhibit.
7–8: **Burlington**–St. Mark's Antique Show
7–9: **Bennington**–Antique Show & Sale.
8–9: **Montpelier**–Fall Foliage Festival, Square Dance.
9: **Plymouth**–Green Mt. Folklore Soc. Fall Meeting, Wilder House 10–3.
12: **Pomfret**–Historical Soc. Farming Exhib.
16: **Shoreham**–Apple Frolic, 8–12 p.m.
27: **Montpelier**–Baptist Church Fair 6–9.
30: **Berlin Corners**–Christmas Bazaar 10–8.

NOVEMBER

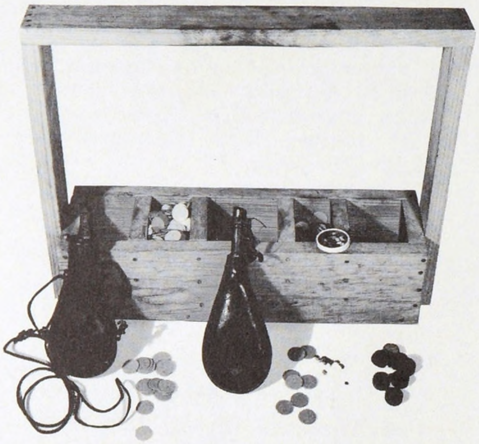
7: **Bristol**–Annual Mums Show.
17: **Montpelier**–Bethany Church Fair 9:30–5.
18: **St. Johnsbury**–Methodist Church Bazaar 9:30–7.
18–20: **Burlington**–Vt. Hand Crafters' Bazaar, Armory.

THEIR ANCIENT MUZZLE-LOADERS LOOK OBSOLETE, BUT

they get a real BANG

OUT OF SKEET SHOOTING WITH THESE ANTIQUE GUNS

by WARNER SHEDD
Photographed by ROBERT BOURDON

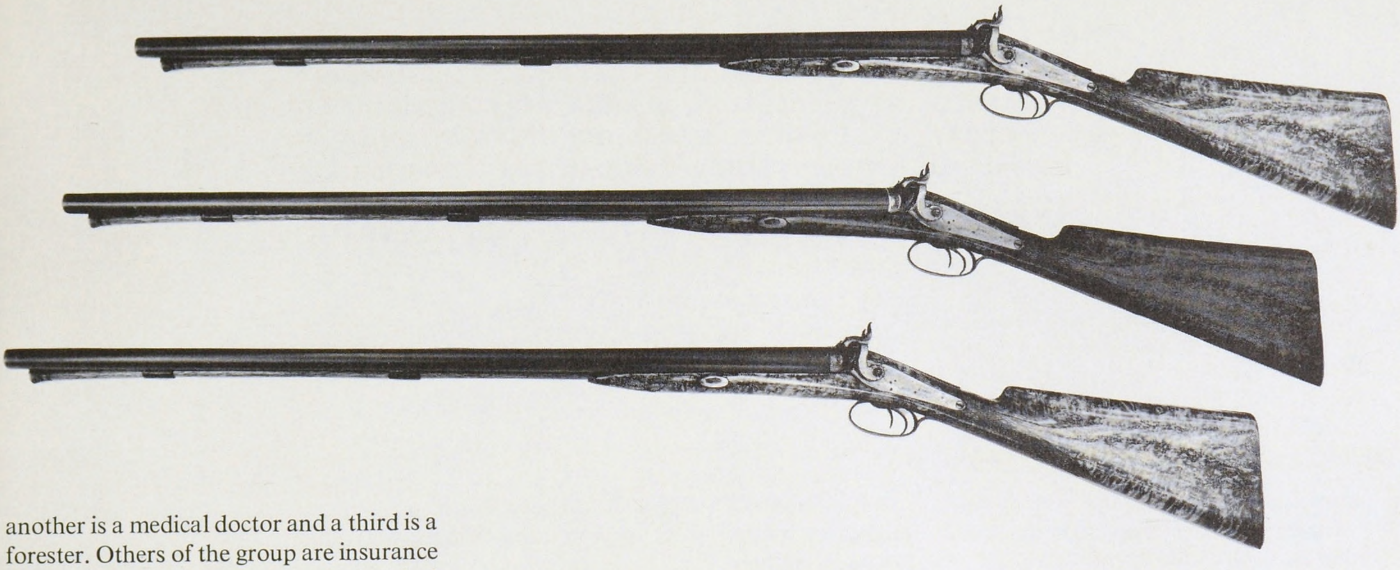


Above is muzzle-loader kit with, from left, powder flask, over-powder wads, cushioning wads, shot pouch, overshot wads, percussion caps. Below, left & center, Bill Allard measures out powder charge, rams home a wad. Below, right, Allard fires from No. 1 station, making heavy smoke.

A late-summer visitor to the grounds of the Sportsman's Club of Franklin County might be justified in wondering whether capricious fate had suddenly transported him back nearly a century. Before him a motley group of men are industriously cramming powder, shot and wads down the business ends of antique firearms, while others are just as busily firing and creating satisfying clouds of gray smoke. This scene might cause him to glance furtively at the nearby woods, anticipating an Indian attack, but a backward look would show rows of reassuring automobiles. If the visitor inquires a bit further, he finds he has stumbled on the annual Vermont Muzzle-Loading Skeet Shoot.

This shoot had its inception 3 years ago when a group who enjoyed shooting muzzle-loading shotguns reached a casual agreement that skeet and muzzle-loaders seemed made for each other. This is primarily due to the fact that muzzle-loading shotguns have very little choke—that is, constriction near the end of the muzzle which helps to hold the shot in a tighter pattern on its way to the target, thus effectively increasing the range of the gun—so muzzle-loaders are best used for shooting at ranges of less than 35 yards. This is ideal for skeet, which requires the shooter to break rapidly moving clay pigeons at very close ranges from a variety of angles. This is merely a happy coincidence, since skeet was not invented until the 1920's, by which time muzzle-loading guns supposedly had been relegated to the scrap heap, or perhaps to a spot over the fireplace.

The small group of men who enjoy the grimy task of loading and firing their antique weapons is a study in variety. Some are expert skeet shots with modern guns. Others, like the author, are complete amateurs. Just as striking is the variety of occupations followed by these enthusiasts. One owns a garage, for example, while

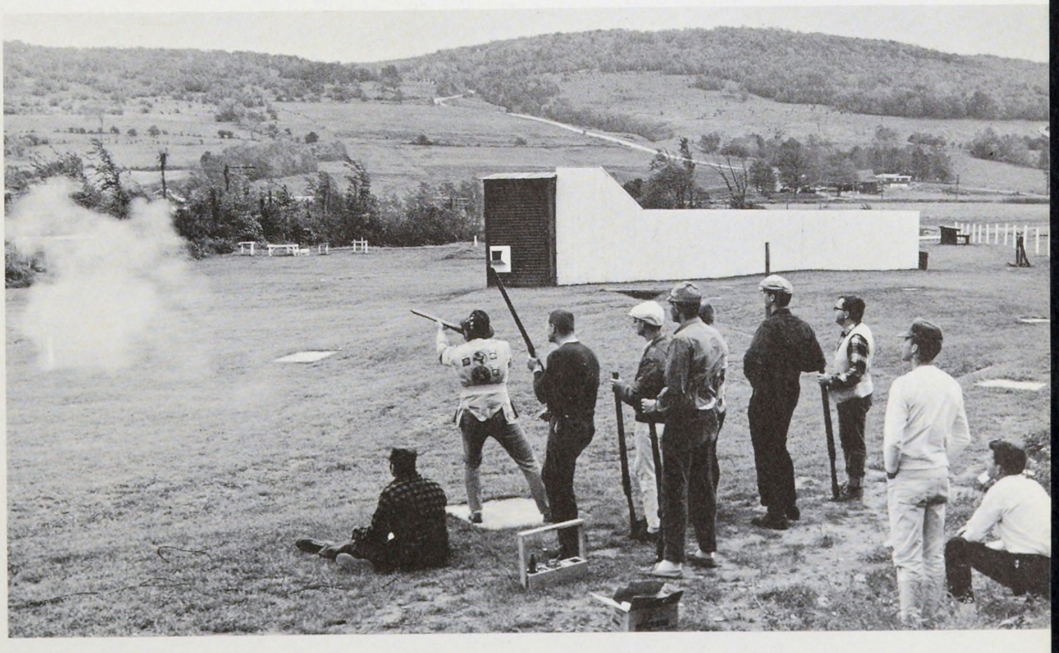


another is a medical doctor and a third is a forester. Others of the group are insurance agent, gunsmith, banker, and electrical engineer.

The shotguns seen at a muzzle-loading skeet shoot are as varied as their owners, although they share the common qualities of exceptionally fine workmanship and states of excellent preservation. Some of the guns were made by well-known gunsmithing firms such as Hollis, while other equally fine guns were made by relatively unknown gunsmiths. A surprisingly high percentage of these firearms are 10 gauge, with the remainder being 12s. All of them are double barrelled, however, since skeet requires the shooter to fire at two clay pigeons, released from separate points simultaneously.

The basics of loading a muzzle-loading shotgun are quite simple, although some of the finer points are sufficiently controversial to engage two or more muzzle-loading fans in interminable debate. Loading calls for, essentially, the construction of a shotgun shell within the barrel of the gun, working from the muzzle end. A charge of black powder is first poured down the barrel from a brass or copper powder flask which automatically measures out the desired charge. Then one or more cardboard, felt, cork, or plastic wads are driven home with a ramrod. The wads are tamped until so tight that the ramrod will bounce when dropped down the barrel. Next the shot is poured down the barrel from a shot pouch equipped with a measure or, alternately, by means of a small dipper. A thin cardboard wad is then placed over the shot to hold it in place. Finally, a percussion cap is placed on each nipple, located on the exterior of the gun's breech. The hammers are then cocked and the gun is ready to fire. When the hammer is released by pulling a trigger, it falls on a percussion cap and explodes it. The fire from the cap is directed downward through the nipple and into the powder charge, thereby producing a soul-satisfying roar and a cloud of evil-smelling gray smoke.

A basic mystery remains: why is a muzzle-loader enthusiast? There is no simple answer to this question, but it might be found in the statement, "Happiness is a cloud of gray smoke at the far end of an antique shotgun."



Bill Mraz, above, steps to firing line as the author reloads. Burt McGowan firing at right: follow-through carries gun muzzle beyond the smoke. His winning score, in a howling gale, was 45 hits in fifty shots.

WHEN THE SOUND OF THE HUNTER IS HEARD IN THE LAND
THE WISE WOMAN SPENDS HER TIME QUIETLY INDOORS
WHILE THE MASCULINE POPULATION, CLAD IN VARYING SHADES OF RED,
HAPPILY ABANDONS ITS USUAL OCCUPATIONS AND
ROAMS THE COUNTRYSIDE FROM DAWN TO SUNSET IN

the Pursuit of Venison

by **LOUISE ANDREWS KENT**
Photograph by **HANSON CARROLL**

DURING DEER SEASON, Mrs. Appleyard says, those Vermont women are wise who take up crewel embroidery, china painting or some other indoor occupation not demanding help from husbands, sons and brothers. At Appleyard Center gunshots crackle through the woods, scarlet caps flash across lion-colored fields. A bald eagle, whose rest has been disturbed, screams past indignantly. Marksmen from Massachusetts happily pull triggers, bringing down Holstein heifers or Guernsey bulls. Visitors from New York State drink peacefully along the back roads, undisturbed by foxes leaping through rusted ferns.

You can't get an appointment with a dentist, a doctor or a garage man. Carpenters lay down their hammers. No plumber plumbs. Lawyers stand on street corners with neon-red caps on their heads. Bankers oil gun stocks. An electrician borrows your gun, promises you a haunch if he gets his deer. If he doesn't, you can buy one in your local market during the deer hunting season and for 20 days after it. Be sure to order it well ahead of time, have them hang it for three weeks, and, this year, have something different and memorable for Thanksgiving.

ROAST VENISON

8 lb. roast of venison, boned and tied
½ lb. beef suet

Venison is a dry meat and needs larding. This may be done with a larding needle filled with strips of salt pork. Mrs. Appleyard prefers beef suet and what she considers an easier method. Take a well scoured ice-pick. Punch holes in the venison here and there. Push bits of suet into the holes with the pick. Now put the larded venison on a rack in a covered roaster with the vents open and pour over it the following

Marinade

1 qt. Zinfandel
6 cloves
1 t. nutmeg
1 bay leaf
3 onions, sliced thin
1 qt. fizzy cider
½ t. allspice
1 t. cinnamon
3 carrots, sliced
5 beans garlic, peeled and sliced
1 T. mixed herbs (thyme, rosemary, parsley, tarragon)

Let the venison stand 2 days in a cool place. Turn meat twice each day. The day you cook it, pour off the marinade. Strain it. Save it. Brush venison with a little Wesson oil and rub it with flour seasoned with pinches of thyme, pepper, nutmeg, sage and paprika. Top the roast with slices of beef suet or bacon. Put about 1 cup of the strained marinade in the pan. Replace liquid as it cooks away. Roast, uncovered, at 275° for about 4 hours. Allow 30 minutes to the pound. Four hours is about right if you like it slightly pink, like medium rare roast lamb. Allow an extra half hour if you prefer it well done. Increase oven heat to 350° during the last half hour. Use a meat thermometer and cook meat to 150° for medium rare, 160° for well done.

Make gravy with the strained marinade. Make a roux of butter and flour, blend in some hot juice from the pan, stir in the marinade, add 2 t. of instant coffee. When the mixture bubbles add a glass of currant jelly and stir until it dissolves.

With the roast Mrs. Appleyard likes

Lima Beans and Mushrooms (*for six*)

3 packages large lima beans frozen
1 T. minced onion
1 T. instant flour
1 t. paprika
1 lb. mushrooms
2 T. butter
½ t. nutmeg
1 c. cream

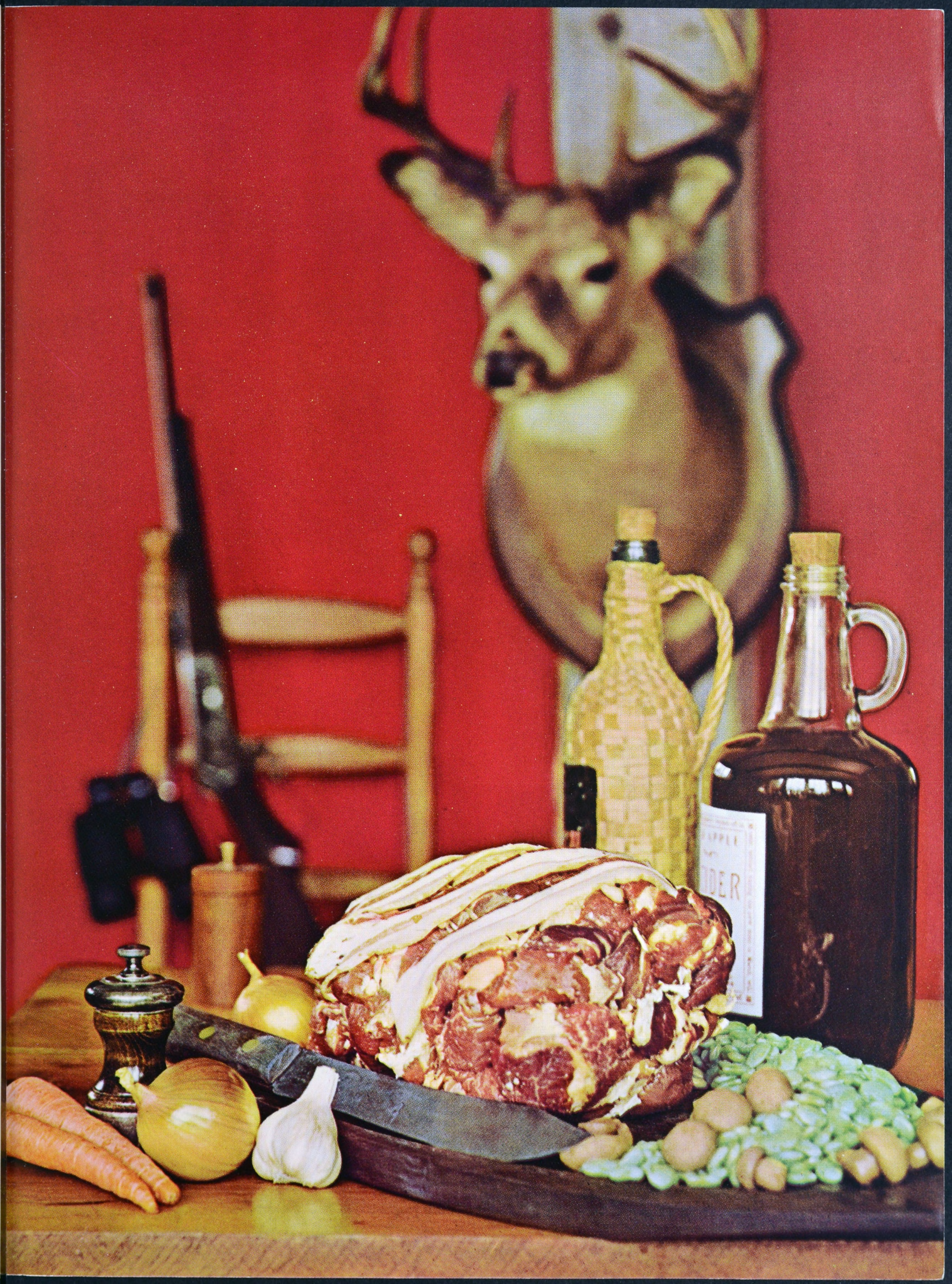
Cook the beans according to directions on the package. Strain off and save the liquid. Put beans into the top of a double boiler. Cook the liquid down to 1 tablespoon. Wash and slice the mushrooms. Slice stems thin. Melt butter, add minced onion and cook until it is yellow and soft. Add the mushrooms. Cook until they are tender but not soft, about 5 minutes over medium heat. Skim them out and add them to the beans. Add a little more butter if necessary and blend in the flour mixed with the seasonings. Cook 2 minutes. Stir in the liquid from the beans and the cream. When the mixture bubbles, pour it over the beans and mushrooms and stir all well together. This can be done ahead of time and is all the better for standing because the beans absorb the mushroom flavor. Reheat over boiling water just before serving.

Glazed Sweet Potatoes (*for six*)

6 good sized sweet potatoes
¾ c. light brown sugar
¼ c. sherry
½ c. butter
½ c. hot water
½ c. peanuts, chopped

Sweet potatoes cook more quickly than white ones. Steam them, unpeeled, until a sharp knife can be pushed into them rather easily—about 25 minutes. They should not be mushy. Cool them, peel them and cut them crosswise into slices 3/8 inch thick. Butter a large shallow baking tin and put in the potatoes in one layer. Dot them generously with butter and sprinkle with the sugar. Pour hot water around them, set the pan into a 375° oven and bake until the syrup is quite thick and the potatoes tender—about half an hour. Baste 3 times with the syrup. Just before serving them, tip pan, pour sherry into the syrup, baste potatoes again. Scatter the coarsely chopped peanuts over them. Return pan to oven for 5 minutes. Serve.

Some people think maple syrup is good on sweet potatoes instead of brown sugar. After all what isn't it good on? If you use it, omit both sherry and nuts or, Mrs. Appleyard says, you won't be able to taste it. She trusts that no such calamity will befall her readers and wishes them a Happy Thanksgiving.


APPLE
IDER

Green Mountain

POST BOY

Eyebrows undoubtedly were raised by some readers when they noted our Summer issue reference to the Stowe Country Club's "19-hole golf course." An erring and non-golfing proofreader was responsible for this gaffe, and no sly innuendoes should be construed.

Vermonter Elbridge Colby made a telling observation in the *Saturday Review's* report earlier this year on "The Declining Apostrophe." Col. Colby, citing the struggles that Thompson's Point has had to retain its rightful spelling, revealed that federal mappers can't tolerate apostrophes, and blandly leave them out.

The Postboy finds that Vermont officials are aping their federal counterparts, in mapping as in so many other regrettable ways. The Official Vermont Highway Map, for instance, shows Kents' Corner ("many Kents, one corner") without its punctuation. It's the same with Hazen's Notch, Mallett's Bay, Larrabee's Point, Smuggler's Notch and many others. The Postboy's theory is that mappers as a breed never learned about the apostrophe in grammar school, and find it a handy solution just to abandon it. One admission: Saxtons River never did carry the possessive mark, as far as we know.

Vermont Life takes pleasure in announcing elsewhere in this issue the publication of its latest book—*The Vermont Year Round Cookbook*—a splendid volume which has been expanded by Louise Andrews Kent (Mrs. Appleyard) from her column feature, which has appeared for some years in the magazine.

Because of the continuing decline in agricultural employment, Vermonters have been especially pleased about recent industrial expansion here. Standard Register is building a brand new $4.8 million plant at Middlebury, to employ some 250; nearby at Vergennes Simmonds Precision Products (see *Vermont Life*, Summer, 1962) has added a $450,000 building to its plant and has raised its employment by 150. The Baumritter furniture people, who began in Vermont with a very large plant at Beecher Falls, have made a $600,000 expansion of their Orleans plant, thus employing 125 more people, and now are increasing their Randolph operation by 12,000 feet to employ 100 more people there.

Early the past summer it began to appear that in several Vermont areas there are more jobs available than people to fill them—and a year hence there will be even more new opportunities.

This reminds the Postboy that a few years back he tried to lend a hand to would-be Vermonters who needed to find positions here, but his efforts bore very little fruit. Now, however, some of those families which have dreamed of living in Vermont may find it is possible.

While not all these new openings are in the white collar category, neither are employment opportunities now so largely limited to dry hand milkers, short order cooks and baby sitters.

We suggest, then, that those who want to try Vermont living, and who have technical, engineering, production, design and other related skills, get in touch with the Industrial Director, Vermont Development Department, Montpelier. This might be the time.

Two new covered bridges, private ones, have been constructed in Vermont recently. The first is a handsome miniature, yet of one car width, crossing a meadow brook at Kents' Corner, Calais. The other, built to reach the home of Mr. & Mrs. Robert Robbins between Barre and East Barre, spans the Jail Branch opposite the Dugout Restaurant. The bridge is a true Queen Post replica of one which stood nearby until the 1927 Flood.

Our Spring issue rashly promised a Summer article on the drilling of a gas well in the Grand Isles. We secured picture coverage of this last autumn, but before publication date for the Summer issue came around, the well (located beside Route 2 in Alburg) was down many thousand feet without result, and the huge rig had disappeared, presumably to Oklahoma.

Other gas wells are to be drilled, we're told, though possibly not in the Grand Isles. Natural gas *is* flowing into Vermont this fall, however, through that corner of the state, by pipeline from Canada. Residents of the Burlington area (where electric rates are advertised as "the lowest in New England") thus are having entrancing visions of something akin to the old-fashioned gasoline price wars.

Readers about The Austine School in our last Winter issue will be interested in the School's fine basketball record the past season. Although the enrollment is only sixteen boys in all, and this was only their second year in competition, the team stood second in the Molly Stark high school league and won the small school division championships of the Eastern Schools for the Deaf. Bear in mind, also, that deafness often causes balance problems—and that the boys can't hear the referee's whistle.

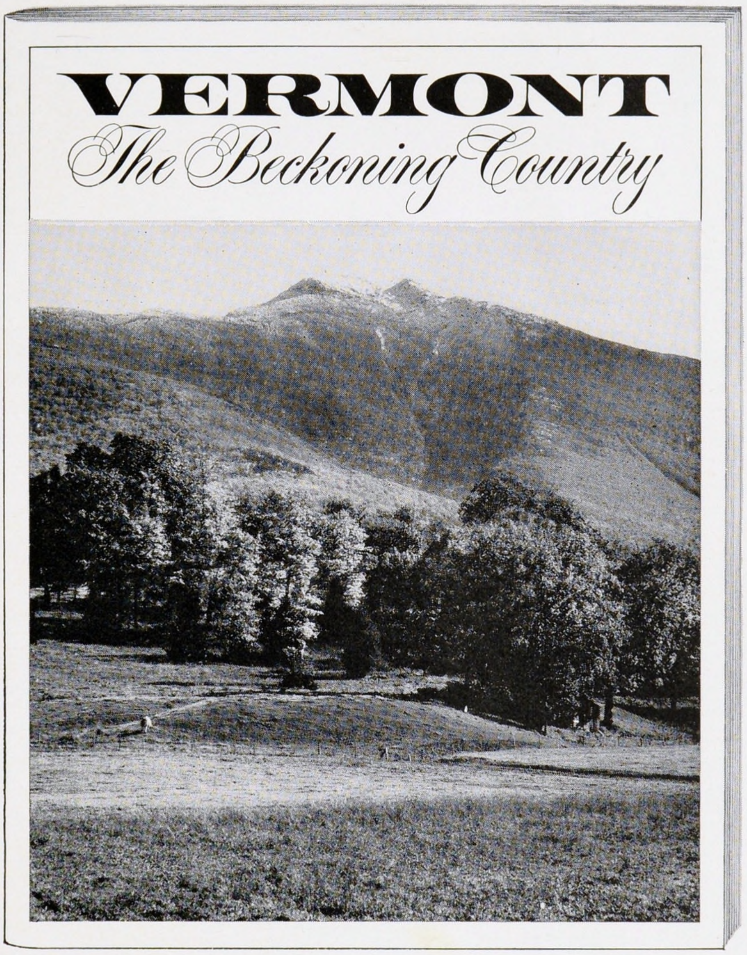
We hope readers are as pleased as the Postboy to find in this issue chapters from two new and very excellent Vermont books. Marguerite Wolf's report on berry pickers starts on page 12.

It comes from her "Anything Can Happen in Vermont," published by Wake-Brook House, Coral Gables, Florida. Mrs. Wolf now lives in Weston, Mass. but her Vermont experiences came during the years when her husband, the non-picker in the article, was dean of the University of Vermont's College of Medicine.

The fine article on Vermont Indians, page 48, comes from "A Book of Country Things," Walter Needham's rememberings of his grandfather in Guilford, and the way he made and did things. The story, recounted to Barrows Mussey, is published by The Stephen Greene Press, Brattleboro.

A Note on Church Suppers: There wasn't space in our Calendar of Events (page 55) to say this, but the hours listed for the suppers usually represent the first "sitting." Subsequent sittings are held at 45-minute to one-hour intervals "until all are served." Then, by tradition, the ladies who have done the work sit down themselves and polish off what's left of these sumptuous repasts. They may be forgiven for having set aside a choice pie or two.

Often reservations are needed for supper sittings, and if you are in the area ahead of time, make inquiries. The first sitting, although held at an unfashionably early hour, usually is the most sought after by local gourmets. Then you can ask after Mattie Davis's famous raised biscuits and Mrs. Hoisington's equally revered baked beans—and they *can't* be all gone.



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